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## Platte County Test Hole Logs

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# **PLATTE COUNTY Test-Hole Logs**

**Raymond R. Burchett and Scott E. Summerside**

**Nebraska Water Survey  
Test-Hole Report No. 71**

**Conservation and Survey Division  
Institute of Agriculture and Natural Resources  
University of Nebraska-Lincoln**



**September 1998**



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Publication and price lists are furnished upon request.

September 1998

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## INTRODUCTION

In 1930, the Conservation and Survey Division of the University of Nebraska and the U.S. Geological Survey began a program of cooperative groundwater studies in Nebraska. Since then test drilling by use of rotary drilling equipment has been an integral part of that program. This report contains logs of all the test holes drilled in the county under the program as well as those drilled by the Conservation and Survey Division with financial assistance from other government agencies.

The map in this report shows the location of all test holes drilled in the county since 1930.

Present techniques of test-hole logging and sampling include use of drilling mud suitable to drilling conditions, timing by stopwatch of the drilling of each 5-foot increment of depth, and removal of all cuttings from the test hole at intervals of 5 feet or less. During the drilling of the hole, cuttings from each interval are examined immediately; samples representing each 5-foot interval and each recognizable change in material are retained. After samples are washed, they are described lithologically and the color is evaluated by comparison with standard color charts. The samples then are dried, stored, and cataloged. Beginning in September 1951, the test holes have been logged electrically. All samples are processed and kept on open file in the offices of Conservation and Survey Division, 113 Nebraska Hall, University of Nebraska-Lincoln, 68588.

This publication is one of a series being issued to make more readily available the record of test holes drilled since 1930. The series of publications is made on a county basis and includes, with some exceptions, logs of all test holes drilled in each of the counties. The logs have not been reviewed for conformance with editorial standards and nomenclature.

The method whereby the altitude of the land surface at testhole sites was determined is indicated in the heading of each log, as follows: a = altimeter, h = hand leveling, i = spirit leveling, t = estimated from topographic map.

The test-hole records accurately reflect subsurface conditions only at the locations where the test holes were drilled. Interpretive data reflecting probable subsurface conditions between test-holes are being compiled for publication in county reports and are available for inspection in the office of the Conservation and Survey Division.

Each test hole is identified by a number assigned in the field (for example #3-B-67, #41-79), and most are also identified by a number indicating its location within the land divisions of the U.S. Bureau of Land Management's survey of Nebraska. Location numbers of test holes east of the 6th principal meridian, which passes through Columbus in a north-south direction, are preceded by the capital letter A; those west of the principal meridian have no preceding letter. The first numeral indicates the township, the second the range, and the third the section. As shown in figure 1, the letters that follow the section number indicate the location of the test hole within the section, the first letter indicating the quarter section and the second letter indicating the quarter-quarter section. The letters A, B, C, and D are applied in counterclockwise direction beginning with A in the northeast quadrant. The last numeral is the serial number of the test hole within the quarter-quarter section. No number is shown unless more than one test hole is within the given quarter-quarter section.

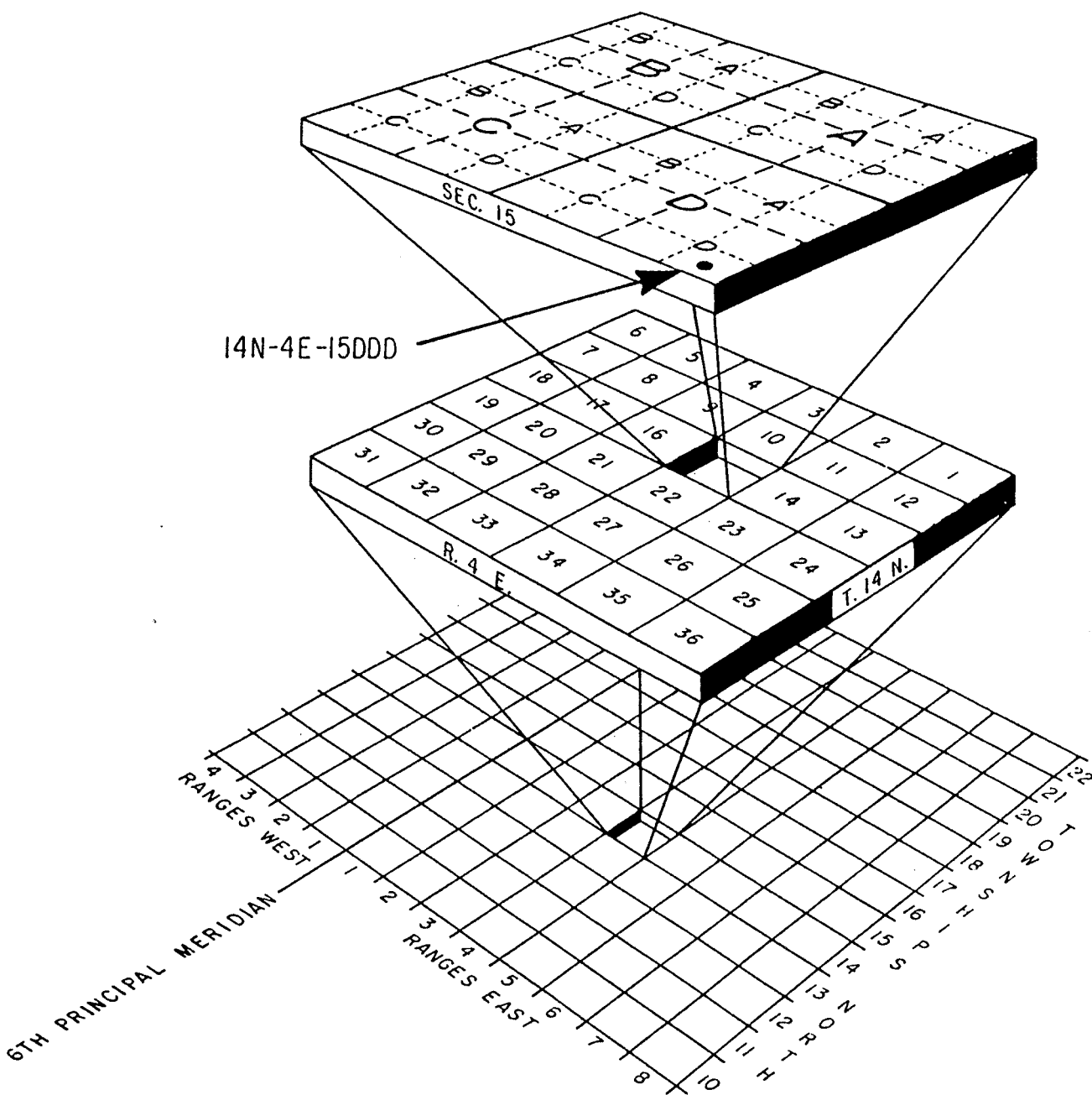


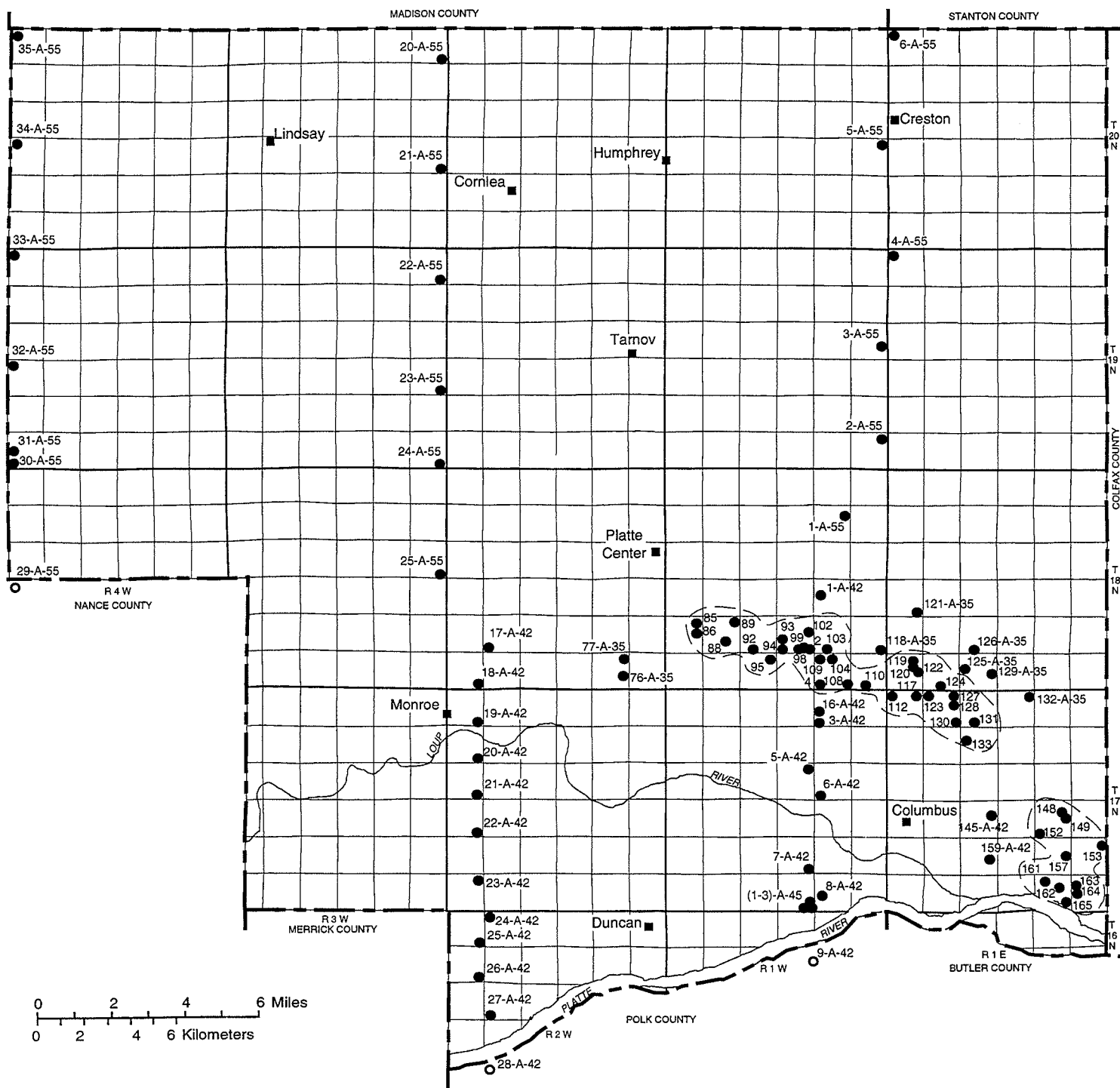
Fig. 1. System for identifying test-holes according to their location.

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- Test hole description published in this report
- Test hole description published in other report
- 👁 Test holes drilled in 1935 and 1942

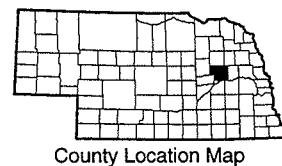


Fig. 2. Test-hole location map of Platte County.

**Test Hole #24-A-42**  
**(16-2-5bbbb)**  
**Platte County**

Location: NW NW NW NW sec. 5, T. 16 N., R. 2 W., approximately 110 feet south of northwest corner.  
 Ground elevation: 1,534.0 ft. (i). (Monroe 7.5 min. quadrangle)  
 Depth to water: 16.5 ft. (7-20-42).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Silt, sandy; contains fine sand.....	0.0	5.0
Sand and gravel, red; texture grades from sand to medium gravel with some coarse gravel.....	5.0	36.0
Sand and gravel, red; texture grades from sand to coarse gravel.....	36.0	50.0
Gravel, red; very coarse texture.....	50.0	56.0
Gravel, red; texture grades from fine to coarse.....	56.0	66.0
Sand and gravel, red; texture grades from sand to coarse gravel.....	66.0	69.0
<b>Cretaceous System - Upper Cretaceous Series - Colorado Group:</b>		
<b>Niobrara Formation:</b>		
Shale, white to buff, chalky.....	69.0	74.0
Shale, yellow to tan, chalky.....	74.0	97.5
Shale, brownish gray to light gray, calcareous.....	97.5	100.0

**Test Hole #25-A-42**  
**(16-2-6ddddd)**  
**Platte County**

Location: SE corner sec. 6, T. 16 N., R. 2 W., approximately 60 feet north of southeast corner.

Ground elevation: 1,539.0 ft. (i). (Monroe 7.5 min. quadrangle)

Depth to water: 22.4 ft. (7-20-42).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Silt, sandy, dark brown; contains fine sand.....	0.0	4.5
Sand, red; contains some clay.....	4.5	7.0
Sand and gravel, red; texture grades from sand to coarse gravel.....	7.0	14.0
Sand and gravel, red; texture grades from sand to fine gravel.....	14.0	22.0
Sand and gravel, red; texture grades from sand to coarse gravel.....	22.0	34.0
Sand, red; contains a trace of fine gravel.....	34.0	39.0
Sand and gravel, red; texture grades from sand to medium gravel with a trace of coarse gravel.....	39.0	49.0
Gravel, red; coarse texture.....	49.0	50.0
Sand and gravel, red; texture grades from sand to fine gravel.....	50.0	54.0
Gravel, red; texture grades from fine to very coarse	54.0	70.0
Gravel, red; texture grades from fine to coarse.....	70.0	108.5
<b>Cretaceous System - Upper Cretaceous Series - Colorado Group:</b>		
<b>Niobrara Formation:</b>		
Shale, white to tan.....	108.5	111.0
Shale, greenish gray to tan.....	111.0	112.0
Shale, dark brown to brownish gray.....	112.0	113.0
Shale, light gray.....	113.0	115.0

**Test Hole #26-A-42**  
**(16-2-7dddd)**  
**Platte County**

Location: SE corner sec. 7, T. 16 N., R. 2 W., approximately 30 feet north of southeast corner.

Ground elevation: 1,519.0 ft. (i). (Silver Creek SE 7.5 min. quadrangle)

Depth to water: 7.8 ft. (7-20-42).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Silt, sandy, dark brown to black.....	0.0	4.0
Sand, clayey, light gray.....	4.0	7.0
Clay, silty, gray.....	7.0	14.0
Sand and gravel, red; texture grades from sand to medium gravel.....	14.0	20.0
Sand and gravel, red; texture grades from sand to coarse gravel.....	20.0	28.0
Gravel, red; texture grades from fine to coarse.....	28.0	35.0
Sand and gravel, red; texture grades from sand to fine gravel.....	35.0	38.0
Gravel, red; texture grades from fine to coarse.....	38.0	46.0
Gravel, red; texture grades from fine to very coarse	46.0	82.0
Clay, sandy, tan.....	82.0	85.0
Clay, silty, greenish gray.....	85.0	88.0
<b>Cretaceous System - Upper Cretaceous Series - Colorado Group:</b>		
<b>Niobrara Formation:</b>		
Shale, white to tan, chalky, reworked.....	88.0	91.0
Shale, white, chalky.....	91.0	92.0
Shale, dark olive gray, calcareous.....	92.0	93.5
Shale, light gray, calcareous.....	93.5	98.0

**Test Hole #27-A-42**  
**(16-2-17cccb)**  
**Platte County**

Location: NW SW SW SW sec. 17, T. 16 N., R. 2 W., approximately 634 feet north and 135 feet east of southwest corner.

Ground elevation: 1,516.0 ft. (i). (Silver Creek SE 7.5 min. quadrangle)

Depth to water: 7.8 ft. (7-20-42).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Sand, slightly silty; fine textured sand.....	0.0	6.0
Sand, silty, black.....	6.0	9.0
Sand and gravel, green and red; texture grades from sand to medium gravel.....	9.0	16.0
Gravel, green and red; texture grades from fine to very coarse with some large pebbles.....	16.0	40.0
Sand and gravel, green and red; texture grades from sand to medium gravel.....	40.0	46.0
Gravel, green and red; texture grades from fine to coarse with some large pebbles.....	46.0	64.0
Sand and gravel, red; texture grades from sand to coarse gravel.....	64.0	70.0
Gravel, red; texture grades from fine to coarse.....	70.0	100.0
Gravel, red; texture grades from fine to coarse; contains a trace of clay.....	100.0	105.0
Gravel, red; texture grades from fine to coarse.....	105.0	109.5
<b>Cretaceous System - Upper Cretaceous Series - Colorado Group:</b>		
<b>Carlile Formation:</b>		
Shale, reddish brown.....	109.5	111.0
Shale, green.....	111.0	112.0
Shale, black.....	112.0	114.0
Shale, dark gray to black.....	114.0	120.0

**Test Hole #132-A-35**  
**(A17-1-3aaaa)**  
**Platte County**

Location: NE corner sec. 3, T. 17 N., R. 1 E.  
 Ground elevation: 1,483.0 ft. (i). (Columbus 7.5 min. quadrangle)  
 Depth to water: 54.2 ft. (8-23-35).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Top soil.....	0.0	2.0
Silt.....	2.0	23.0
Sand.....	23.0	50.0
Gravel.....	50.0	60.0
Sand.....	60.0	68.0
Gravel.....	68.0	76.0

**Test Hole #131-A-35**  
**(A17-1-4ccdc)**  
**Platte County**

Location: SW SE SW SW sec. 4, T. 17 N., R. 1 E.  
Ground elevation: 1,514.0 ft. (i). (Columbus 7.5 min. quadrangle)  
Depth to water: 76.0 ft. (11-1-35).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Silt.....	0.0	19.0
Sand.....	19.0	41.0
Sand; coarse textured.....	41.0	65.0
Sand and gravel.....	65.0	84.0

**Test Hole #123-A-35**  
**(A17-1-5bbbb)**  
**Platte County**

Location: NW corner sec. 5, T. 17 N., R. 1 E.

Ground elevation: 1,514.0 ft. (i). (Columbus 7.5 min. quadrangle)

Depth to water: 67.0 ft. (11-1-35).

Depth, in feet  
From To

**Quaternary System, undifferentiated:**

Silt.....	0.0	25.0
Clay, sandy.....	25.0	40.0
Sand; fine texture.....	40.0	71.0
Gravel.....	71.0	85.0



**Test Hole #127-A-35**  
**(A17-1-5aaaa)**  
**Platte County**

Location: NE corner sec. 5, T. 17 N., R. 1 E.  
 Ground elevation: 1,503.0 ft. (i). (Columbus 7.5 min. quadrangle)  
 Depth to water: 61.0 ft. (11-1-35).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Silt.....	0.0	25.0
Sand.....	25.0	78.0
Gravel.....	78.0	90.0

**Test Hole #128-A-35**  
**(A17-1-5daaa)**  
**Platte County**

Location: NE corner SE sec. 5, T. 17 N., R. 1 E.

Ground elevation: 1,522.0 ft. (i). (Columbus 7.5 min. quadrangle)

Depth to water: 81.0 ft. (11-1-35).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Silt.....	0.0	25.0
Sand.....	25.0	76.0
Sand and gravel; texture grades from coarse sand to fine gravel.....	76.0	85.0
Gravel.....	85.0	99.0

Test Hole #130-A-35  
(A17-1-5ddcc)  
Platte County

Location: SW corner SE SE sec. 5, T. 17 N., R. 1 E.  
Ground elevation: 1,510.0 ft. (i). (Columbus 7.5 min. quadrangle)  
Depth to water: 68.1 ft. (8-30-35).

	<u>Depth, in feet</u>	
	From	To
Quaternary System, undifferentiated:		
Toil.....	0.0	6.0
Silt.....	6.0	32.0
Sand; fine texture.....	32.0	50.0
Sand; coarse texture.....	50.0	77.0
Gravel.....	77.0	86.0

**Test Hole #112-A-35**  
**(A17-1-6bbcb)**  
**Platte County**

Location: NW SW NW NW sec. 6, T. 17 N., R. 1 E.  
Ground elevation: 1,529 ft. (i). (Columbus 7.5 min. quadrangle)  
Depth to water: 79.0 ft. (11-1-35).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Silt.....	0.0	40.0
Sand; fine texture.....	40.0	80.0
Gravel.....	80.0	92.0

**Test Hole #117-A-35**  
**(A17-1-6aaaa)**  
**Platte County**

Location: NE NE NE NE sec. 6, T. 17 N., R. 1 E.  
Ground elevation: 1,529.0 ft. (i). (Columbus 7.5 min. quadrangle)  
Depth to water: 73.4 ft. (8-7-35).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Silt.....	0.0	40.0
Sand, silty.....	40.0	65.0
Sand.....	65.0	85.0
Gravel.....	85.0	97.0

**Test Hole #133-A-35**  
**(A17-1-9bcbc)**  
**Platte County**

Location: SW NW SW NW sec. 9, T. 17 N., R. 1 E.  
Ground elevation: 1,458.0 ft. (t). (Columbus 7.5 min. quadrangle)  
Depth to water: 58.9 ft. (9-25-35).

No sample description  
Total depth: 58.9 ft.

**Test Hole #145-A-35**  
**(A17-1-21addd)**  
**Platte County**

Location: SE corner NE sec. 21, T. 17 N., R. 1 E.  
Ground elevation: 1,432.0 ft. (t). (Columbus 7.5 min. quadrangle)  
Depth to water: 8.12 ft. (8-17-35).

No sample description  
Total depth: 17.0 ft.

**Test Hole #148A-35**  
**(A17-1-23adbc)**  
**Platte County**

Location: SW NW SE NE sec. 23, T. 17 N., R. 1 E.  
Ground elevation: 1,422.0 ft. (t). (Columbus 7.5 min. quadrangle)  
Depth to water: 13.89 ft. (9-9-35).

No sample description  
Total depth: 22.0 ft.



**Test Hole #149-A-35**  
**(A17-1-23adad)**  
**Platte County**

Location: SE NE SE NE sec. 23, T. 17 N., R. 1 E.  
Ground elevation: 1,423.0 ft. (t). (Columbus 7.5 min. quadrangle)  
Depth to water: 10.26 ft. (9-9-35).

No sample description  
Total depth: 17.0 ft.

**Test Hole #152-A-35**  
**(A17-1-23ddcc)**  
**Platte County**

Location: SW SW SE SE sec. 23, T. 17 N., R. 1 E.  
Ground elevation: 1,416.0 ft. (t). (Columbus 7.5 min. quadrangle)  
Depth to water: 10.23 ft. (9-9-98).

No sample description:  
Total depth: 17.0 ft.

**Test Hole #153-A-35**  
**(A17-1-25aaaa)**  
**Platte County**

Location: NE corner sec. 25, T. 17 N., R. 1 E.  
Ground elevation: 1,413.0 ft. (t). (Columbus 7.5 min. quadrangle)  
Depth to water: 12.2 ft. (9-9-35).

No sample description  
Total depth: 22.0 ft.

**Test Hole #156-A-35**  
**(A17-1-26bccc)**  
**Platte County**

Location: SW corner NW sec. 26, T. 17 N., R. 1 E.  
Ground elevation: 1,421.0 ft. (t). (Columbus 7.5 min. quadrangle)  
Depth to water: 14.71 ft. (9-9-98).

No sample description  
Total depth: 22.0 ft.

**Test Hole #157-A-35**  
**(A17-1-26addd)**  
**Platte County**

Location: SE corner NE sec. 26, T. 17 N., R. 1 E.  
Ground elevation: 1,414.0 ft. (t). (Columbus 7.5 min. quadrangle)  
Depth to water: 9.38 ft. (9-9-35).

No sample description  
Total depth: 17.0 ft.

**Test Hole #159-A-35**  
**(A17-1-28daaa)**  
**Platte County**

Location: NE corner SE sec. 28, T. 17 N., R. 1 E.  
Ground elevation: 1,422.0 ft. (t). (Columbus 7.5 min. quadrangle)  
Depth to water: 7.53 ft. (9-10-35).

No sample description  
Total depth: 17.0 ft.

**Test Hole #161-A-35**  
**(A17-1-35babb)**  
**Platte County**

Location: NW NW NE NW sec. 35, T. 17 N., R. 1 E.  
Ground elevation: 1,416.0 ft. (t). (Columbus 7.5 min. quadrangle)  
Depth to water: 5.34 ft. (9-10-35).

No sample description  
Total depth: 12.0 ft.

**Test Hole 162-A-35**  
**(A17-1-35accc)**  
**Platte County**

Location: NE SW SW SW sec. 35, T. 17 N., R. 1 E.  
Ground elevation: 1,413.0 ft. (t). (Columbus 7.5 min. quadrangle)  
Depth to water: 6.25 ft. (9-9-35).

No sample description  
Total depth: 17.0 ft.



**Test Hole #165-A-35**  
**(A17-1-35dabc)**  
**Platte County**

Location: NW corner SW NE SE sec. 35, T. 17 N., R. 1 E.  
Ground elevation: 1,412.0 ft. (t). (Columbus 7.5 min. quadrangle)  
Depth to water: 9.81 ft. (9-9-35).

No sample description  
Total depth: 17.0 ft.

**Test Hole #163-A-35**  
**(A17-1-36bccc)**  
**Platte County**

Location: SW corner NW sec. 36, T. 17 N., R. 1 E.  
Ground elevation: 1,414.0 ft. (t). (Columbus 7.5 min. quadrangle)  
Depth to water: 8.87 ft. (9-9-35).

No sample description  
Total depth: 17.0 ft.

**Test Hole #3-A-42**  
**(17-1-2cccc)**  
**Platte County**

Location: SW corner sec. 2, T. 17 N., R. 1 W., approximately 75 feet east of southwest corner.

Ground elevation: 1,463.0 ft. (i). (Duncan 7.5 min. quadrangle)

Depth to water: 4.3 ft. (7-8-42).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Road fill and soil, clay, silty, dark brown to black	0.0	5.0
Clay, silty to sandy, gray.....	5.0	10.0
Silt to sand; fine-textured sand with a trace of gravel.....	10.0	14.0
Gravel, red; texture grades from fine to coarse.....	14.0	20.0
Gravel, red to yellow; medium texture; contains some shale pebbles.....	20.0	34.0
Gravel; texture grades from medium to coarse; contains shale pebbles.....	34.0	39.0
Gravel, medium with some coarse gravel; contains a few lime pebbles.....	39.0	49.0
Gravel, red to yellow and black; texture grades from fine to medium gravel with some sand; in part iron stained; contains shale and limy fragments...	49.0	55.0

**Test Hole #16-A-42**  
**(17-1-2ccbc)**  
**Platte County**

Location: SW NW SW SW sec. 2, T. 17 N., R. 1 W., approximately 714 feet north of southwest corner.

Ground elevation: 1,472.0 ft. (i). (Duncan 7.5 min. quadrangle)

Depth to water: 12.0 ft. (7-8-42).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Road fill.....	0.0	4.0
Clay, brown.....	4.0	6.0
Sand, red; contains some fine gravel.....	6.0	10.0
Sand and gravel, red; texture grades from sand to medium gravel.....	10.0	23.0
Gravel, red; texture grades from coarse to very coarse.....	23.0	51.0
Gravel, red and yellow; texture grades from fine to medium.....	51.0	61.0
Gravel, red and yellow; texture grades from fine to medium.....	61.0	88.0
Clay, light gray, sandy.....	88.0	97.5
Gravel, red; texture grades from fine to coarse.....	97.5	101.0
Clay, tan to pink.....	101.0	103.0
Gravel, red; texture grades from fine to coarse.....	103.0	105.0
Clay, tan to pink.....	105.0	108.0
Clay, dark gray.....	108.0	120.0
Clay, light gray.....	120.0	140.0
Clay, light gray to tan and white.....	140.0	153.0
<b>Cretaceous System - Upper Cretaceous Series - Colorado Group:</b>		
<b>Carlile Formation:</b>		
Shale, dark gray to black, yellow in upper part.....	153.0	159.5

**Test Hole #6-A-42**  
**(17-1-14ccbb)**  
**Platte County**

Location: NW NW SW SW sec. 14, T. 17 N., R. 1 W., approximately 1320 feet north and 15 feet east of southwest corner.

Ground elevation: 1,462.0 ft. (i). (Duncan 7.5 min. quadrangle)

Depth to water: 11.0 ft. (7-8-42).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Road fill.....	0.0	5.0
Clay, light gray, silty to sand.....	5.0	8.0
Sand and gravel, red; texture grades from sand to coarse gravel.....	8.0	13.0
Clay, gray, silty.....	13.0	15.0
Gravel, grayish green, silty; texture grades from fine to coarse.....	15.0	20.0
Gravel, grayish green, medium with some coarse; contains some sand.....	20.0	35.0
Gravel, green and red; texture grades from fine to coarse with some sand.....	35.0	45.0
Gravel, green and red; texture grades from medium to coarse.....	45.0	48.0
Gravel, green and red; coarse texture.....	48.0	51.0
Gravel, green and red; texture grades from fine to coarse.....	51.0	53.0
Gravel, green and red; coarse texture.....	53.0	57.0
Clay, greenish gray, sandy.....	57.0	58.5
Gravel, red and green; texture grades from fine to very coarse.....	58.5	68.0
Clay, greenish gray.....	68.0	69.0
Clay, sandy, tan to greenish gray.....	69.0	74.0
Gravel, red; texture grades from fine to medium.....	74.0	77.5
Sand, clayey, brown to gray.....	77.5	78.5
Sand, clayey, brown.....	78.5	82.0
Sand, clayey, or clay, sandy, tan.....	82.0	87.0
Gravel, red; texture grades from fine to coarse.....	87.0	104.0
Sand, silty to clayey, greenish gray.....	104.0	105.5
Gravel, red; texture grades from fine to coarse.....	105.5	120.0
Gravel, red and some green; texture grades from fine to medium gravel with some sand.....	120.0	129.0
Clay, sandy, light gray.....	129.0	133.0
Clay, tan.....	133.0	136.0
Gravel, red with some green; texture grades from fine to medium.....	136.0	143.0
Clay, sandy, tan.....	143.0	144.0
Clay, sandy, tan to dark brown.....	144.0	145.0
Clay, sandy, gray.....	145.0	162.0

Gravel, gray to green and yellow; texture grades from fine to medium.....	162.0	170.0
<b>Cretaceous System - Upper Cretaceous Series - Colorado Group:</b>		
<b>Carlile Formation:</b>		
Shale, dark gray to black with greenish tint.....	170.0	175.0

**Test Hole #5-A-42**  
**(17-1-15aaad)**  
**Platte County**

Location: SE NE NE NE sec. 15, T. 17 N., R. 1 W., approximately 400 feet south of northeast corner.

Ground elevation: 1,459.0 ft. (i). (Duncan 7.5 min. quadrangle)

Depth to water: 2.9 ft. (7-8-42).

Depth, in feet  
 From To

**Quaternary System, undifferentiated:**

Road fill and soil, silt, in part sandy, dark gray to black.....	0.0	5.0
Clay, silty to sandy, greenish gray.....	5.0	8.0
Sand and gravel, gray to green; texture grades from sand to fine gravel with some coarser gravel.....	8.0	14.0
Gravel and some sand, gray to green; texture grades from sand to coarse gravel.....	14.0	30.0
Sand and gravel; texture grades from sand to medium gravel; contains a thin layer of clay at 32 ft....	30.0	47.0
Gravel, gray to green; coarse texture.....	47.0	50.0
Gravel, gray to green; texture grades from fine to medium with some coarse; contains some sand.....	50.0	68.0
Gravel, gray to green and red; texture grades from fine to very coarse.....	68.0	71.0
Clay, iron-stained.....	71.0	72.0
Clay, greenish gray.....	72.0	75.0
Clay, light buff gray.....	75.0	85.0
Clay, tan.....	85.0	87.0
Gravel, red; texture grades from fine to coarse.....	87.0	98.0
Clay, sandy, gray to tan.....	98.0	107.0
Gravel, red; texture grades from fine to medium with some coarse.....	107.0	109.0
Clay, sandy, tan to pink.....	109.0	117.0
Gravel, green and red; texture grades from fine to medium with some coarse.....	117.0	126.0
Clay, tan; contains white limy layers.....	126.0	139.0
Gravel, green and red; fine texture.....	139.0	148.0
Gravel, red and yellow; texture grades from fine to coarse.....	148.0	160.0
Gravel, yellow to red and green; texture grades from fine to medium with some coarse.....	160.0	164.5

**Cretaceous System - Upper Cretaceous Series - Colorado Group:**

**Carlile Formation:**

Shale, dark gray to black.....	164.5	180.0
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**Test Hole #7-A-42**  
**(17-1-27ddad)**  
**Platte County**

Location: SE SE NE SE sec. 27, T. 17 N., R. 1 W., approximately 1400 feet north of southeast corner.

Ground elevation: 1,449.0 ft. (i). (Duncan 7.5 min. quadrangle)

Depth to water: 4.3 ft. (7-6-42).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Sand; fine texture; iron-stained from 3 to 4 ft.....	0.0	5.0
Gravel, green-gray; texture grades from fine to medium.....	5.0	10.0
Gravel, green to gray; texture grades from fine to coarse; red below 19 ft.....	10.0	24.0
Gravel, red; texture grades from fine to very coarse	24.0	35.0
Clay, green.....	35.0	38.0
Gravel, red to brown; very coarse texture.....	38.0	45.5
Sand, clayey, iron-stained.....	45.5	46.5
Gravel, reddish brown to red and some green; very coarse texture.....	46.5	50.0
Gravel, red; medium texture.....	50.0	57.0
Gravel, red to brown and green; texture grades from fine to coarse.....	57.0	64.0
Gravel, pink, green and yellow; texture grades from fine to coarse.....	64.0	70.0
Gravel, pink to red; texture grades from very fine to very coarse.....	70.0	92.0
Gravel, red; texture grades from fine to coarse.....	92.0	100.0
Gravel, red; fine texture.....	100.0	102.5
Clay, sandy, iron-stained.....	102.5	104.0
Gravel, red; texture grades from fine to coarse.....	104.0	111.0
<b>Cretaceous System - Upper Cretaceous Series - Colorado Group:</b>		
<b>Carlile Formation:</b>		
Clay or shale, iron-stained.....	111.0	112.0
Shale, black to green.....	112.0	114.0
Shale, light gray with iron stain.....	114.0	125.0
Shale, dark blue to gray.....	125.0	130.0



**Test Hole #1-A-45**  
**(A17-1-34dccb)**  
**Platte County**

Location: NW SW SW SE sec. 34, T. 17 N., R. 1 W., approximately 500 feet north and 2,610 feet west of southeast corner.

Ground elevation: 1,461.0 ft. (t). (Duncan 7.5 min. quadrangle)

Depth to water: 7.82 ft. (11-30-45).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Soil.....	0.0	2.5
Sand and gravel, red, orange, and yellow.....	2.5	29.0
Gravel and sand, gravel is medium to coarse with some pebbles; sand is medium to coarse.....	29.0	69.0
Gravel as above with a sandy clay layer from 70.5 to 72.0 ft.....	69.0	79.0
Clay, light tan.....	79.0	84.0
Clay, dark gray.....	84.0	99.0
<b>Cretaceous System - Upper Cretaceous Series - Colorado Group:</b>		
<b>Carlile Formation:</b>		
Shale, dark gray.....	99.0	119.0

**Test Hole #2-A-45**  
**(A17-1-34dccb)**  
**Platte County**

Location: NW SW SW SE sec. 34, T. 17 N., R. 1 W., approximately 600 feet north and 2,600 feet west of southeast corner.

Ground elevation: 1,461.0 ft. (t). (Duncan 7.5 min. quadrangle)

Depth to water: unknown.

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Soil.....	0.0	2.5
Gravel and sand, gravel is medium to coarse and sand is medium to coarse.....	2.5	69.0
Gravel, very coarse and some yellow sandy clay.....	69.0	79.0
Clay, sandy, green.....	79.0	84.0

**Test Hole #3-A-45**  
**(A17-1-34dcbc)**  
**Platte County**

Location: SW NW SW SE sec. 34, T. 17 N., R. 1 W., approximately 700 feet north and 2,590 feet east of southeast corner.

Ground elevation: 1,461.0 ft. (t). (Duncan 7.5 min. quadrangle)

Depth to water: unknown.

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Soil.....	0.0	3.0
Gravel and sand, gravel is medium to coarse, sand is medium to coarse.....	3.0	69.0
Sand and gravel, sand is coarse, gravel is fine....	69.0	79.0
Clay, light gray and yellowish; contains some sand and gravel.....	79.0	89.0

**Test Hole #8-A-42**  
**(17-1-35cbbb)**  
**Platte County**

Location: NW corner SW sec. 35, T. 17 N., R. 1 W., approximately  
 2,640 feet north and 60 feet east of southwest corner.

Ground elevation: 1,455.0 ft. (i). (Duncan 7.5 min. quadrangle)

Depth to water: Unknown, test hole caved at 7.3 ft. (7-6-42).

Depth, in feet  
 From                  To

**Quaternary System, undifferentiated:**

Road fill, silt and sand, reddish brown.....	0.0	5.0
Gravel, red; texture grades from fine to coarse.....	5.0	19.0
Gravel and some sand, red; texture grades from sand to medium gravel.....	19.0	24.0
Gravel, red; texture grades from fine to coarse.....	24.0	37.0
Clay, sandy, greenish gray.....	37.0	43.0
Clay, tan.....	43.0	48.0
Gravel, red; texture grades from fine to medium.....	48.0	53.0
Gravel, red; texture grades from fine to coarse.....	53.0	57.5
Clay, sandy, tan.....	57.5	59.0
Gravel, red; texture grades from fine to coarse.....	59.0	85.0
Clay, sandy, iron-stained.....	85.0	87.0

**Cretaceous System - Upper Cretaceous Series - Colorado Group:**

**Carlile Formation:**

Clay or shale, green to tan.....	87.0	90.0
Clay or shale, dark gray to black.....	90.0	101.0
Clay or shale, dark gray to light gray with iron- stain.....	101.0	104.0
Shale, light gray.....	104.0	107.0
Shale, black with slight greenish tint.....	107.0	140.0

**Test Hole #19-A-42**  
**(17-2-6dddd)**  
**Platte County**

Location: SE corner sec. 6, T. 17 N., R. 2 W., approximately 25 feet north of southeast corner.

Ground elevation: 1,504.0 ft. (i). (Monroe 7.5 min. quadrangle)

Depth to water: 4.2 ft. (7-20-42).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Road fill.....	0.0	2.0
Sand, red.....	2.0	5.0
Gravel, red; texture grades from fine to coarse.....	5.0	9.0
Gravel, green, gray and red; texture grades from fine to coarse.....	9.0	18.0
Gravel, red; texture grades from fine to medium.....	18.0	22.0
Gravel, red; texture grades from fine to very coarse	22.0	30.0
Gravel, red; fine texture.....	30.0	32.0
Gravel, red; texture grades from fine to very coarse	32.0	49.0
Gravel, red; texture grades from fine to coarse.....	49.0	54.5
Clay, sandy, brown to pink.....	54.5	61.0
<b>Cretaceous System - Upper Cretaceous Series - Colorado Group:</b>		
<b>Niobrara Formation:</b>		
Shale, white to yellow.....	61.0	62.0
Shale, yellow to white, chalky.....	62.0	86.0
Shale, light gray to brown.....	86.0	88.0
Shale, olive gray to light gray.....	88.0	94.0
Shale, light gray.....	94.0	99.0

**Test Hole #20-A-42**  
**(17-2-7ddad)**  
**Platte County**

Location: SE NE SE SE sec. 7, T. 17 N., R. 2 W., approximately 900 feet north of southeast corner.

Ground elevation: 1,505.0 ft. (i). (Monroe 7.5 min. quadrangle)

Depth to water: 5.8 ft. (7-20-42).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Road fill and sand, silty; fine texture sand.....	0.0	5.0
Sand and gravel, red; texture grades from sand to medium gravel.....	5.0	10.0
Sand and gravel, gray, green and red; texture grades from sand to coarse gravel.....	10.0	18.0
Sand and gravel, gray, green and red; texture grades from sand to medium gravel.....	18.0	23.0
Gravel, gray, green and red; texture grades from fine to coarse.....	23.0	25.0
Sand and gravel, gray green and red; texture grades from sand to medium gravel.....	25.0	29.0
Gravel, gray, green and red; texture grades from fine to coarse.....	29.0	45.0
Gravel, gray, green and red; texture grades from fine to very coarse.....	45.0	51.0
Gravel, gray, green and red; texture grades from fine to medium.....	51.0	53.5
Clay, pink.....	53.5	56.0
<b>Cretaceous System - Upper Cretaceous Series - Colorado Group:</b>		
<b>Niobrara Formation:</b>		
Shale, white to yellow, chalky.....	56.0	86.5
Shale, light gray to brownish gray to olive gray....	86.5	90.0

**Test Hole #21-A-42**  
**(17-2-18ddddd)**  
**Platte County**

Location: SE corner sec. 18, T. 17 N., R. 2 W., approximately 60 feet north of southeast corner.

Ground elevation: 1,514.0 ft. (i). (Monroe 7.5 min. quadrangle)

Depth to water: 12.5 ft. (7-20-42).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Road fill and sand; fine texture.....	0.0	3.0
Sand with a trace of gravel; texture fine.....	3.0	5.0
Sand and gravel, red; texture grades from sand to fine gravel.....	5.0	14.0
Sand and gravel, red; texture grades from sand to coarse gravel.....	14.0	18.0
Sand and gravel, red; texture grades from sand to medium gravel.....	18.0	25.0
Gravel, red; texture grades from fine to very coarse	25.0	30.0
Sand and gravel, red; texture grades from sand to medium gravel.....	30.0	34.0
Gravel, red; texture grades from fine to very coarse	34.0	39.0
Gravel, red; texture grades from fine to medium.....	39.0	44.0
Gravel, red; texture grades from fine to coarse.....	44.0	51.0
Gravel, red; fine texture.....	51.0	53.0
Gravel, red; texture grades from fine to coarse.....	53.0	59.0
Gravel, red; fine texture.....	59.0	67.0
Gravel, red; texture grades from fine to medium.....	67.0	74.0
Gravel, red; texture grades from fine to coarse.....	74.0	79.0
Clay, sandy, brown to tan.....	79.0	81.0
Gravel, red; texture grades from fine to medium with a trace of coarse.....	81.0	87.0
Clay, sandy, brown to yellow.....	87.0	87.5
Gravel, red; texture grades from fine to coarse.....	87.5	99.0
Clay, sandy, gray with iron-stain.....	99.0	104.0
Gravel, red; texture fine with some coarse.....	104.0	113.0
Gravel, red; texture grades from fine to coarse.....	113.0	120.0
Gravel, red; texture grades from fine to medium.....	120.0	127.0
Gravel, red; texture grades from fine to coarse.....	127.0	139.0
Clay, sandy, gray to pink.....	139.0	146.0
Gravel, red; fine texture; contains some clay.....	146.0	150.0
Gravel, yellow to red; fine texture.....	150.0	164.0
<b>Cretaceous System - Upper Cretaceous Series - Colorado Group:</b>		
<b>Carlile Formation:</b>		
Shale, bluish gray to light gray; white from 164 to 166 ft.....	164.0	170.0

**Test Hole #22-A-42**  
**(17-2-19ddddd)**  
**Platte County**

Location: SE corner sec. 19, T. 17 N., R. 2 W., approximately 25 feet north of southeast corner.

Ground elevation: 1,524.0 ft. (i). (Monroe 7.5 min. quadrangle)

Depth to water: 20.4 ft. (7-20-42).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Road fill and sand; fine texture.....	0.0	7.0
Sand and gravel, red; texture grades from sand to medium gravel.....	7.0	13.0
Sand; fine texture.....	13.0	18.0
Gravel, red; texture grades from fine to coarse.....	18.0	20.0
Sand and gravel, red; texture grades from sand to fine gravel with a trace of coarser gravel.....	20.0	34.0
Sand and gravel, red; texture grades from sand to coarse gravel.....	34.0	42.0
Gravel, red; texture grades from fine to very coarse	42.0	53.0
Sand and gravel, red; texture grades from sand to fine gravel.....	53.0	55.0
Gravel, red; texture grades from fine to very coarse	55.0	60.0
Sand and gravel, red; texture grades from sand to coarse gravel.....	60.0	65.0
Gravel, red; texture grade from fine to coarse; contains reworked shale.....	65.0	69.0
Clay, gray.....	69.0	70.0
Gravel, red; texture grades from fine to very coarse	70.0	77.0
Clay, sandy, gray to tan.....	77.0	77.5
Gravel, red; texture grades from fine to coarse.....	77.5	94.0
Gravel, red; texture grades from medium to coarse...	94.0	100.0
Gravel, red; texture grades from fine to medium.....	100.0	102.5
<b>Cretaceous System - Upper Cretaceous Series - Colorado Group:</b>		
<b>Niobrara Formation:</b>		
Shale, light yellow, chalky.....	102.5	119.5
Shale, light gray to tan, chalky.....	119.5	124.0
<b>Carlile Formation:</b>		
Shale, dark olive gray to dark grayish brown, calcareous.....	124.0	129.0
Shale, light gray, calcareous.....	129.0	130.0



**Test Hole #23-A-42**  
**(17-2-31aaad)**  
**Platte County**

Location: SE NE NE NE sec. 31, T. 17 N., R. 2 W., approximately 485 feet south of northeast corner.

Ground elevation: 1,530.0 ft. (i). (Monroe 7.5 min. quadrangle)

Depth to water: 15.6 ft. (7-20-42).

Depth, in feet  
From To

**Quaternary System, undifferentiated:**

Sand; fine texture.....	0.0	4.0
Sand; contains some fine to coarse gravel.....	4.0	47.0
Gravel, red; texture grades from fine to coarse.....	47.0	55.0
Gravel, red; texture grades from fine to very coarse; contains limestone and shale pebbles.....	55.0	62.0
Gravel, red; texture grades from medium to very coarse.....	62.0	68.5

**Cretaceous System - Upper Cretaceous Series - Colorado Group:**

**Niobrara Formation:**

Shale, yellow, chalky.....	68.5	75.0
Shale, white to yellow, chalky; slightly darker below 84 ft.....	75.0	91.0
Shale, white to gray.....	91.0	92.0
Shale, light gray.....	92.0	100.0

**Test Hole #121-A-35**  
**(A18-1-19dddd)**  
**Platte County**

Location: SE corner sec. 19, T. 18 N., R. 1 E.  
Ground elevation: 1,498.0 ft. (t). (Humphrey SE 7.5 min. quadrangle)  
Depth to water: 26.67 ft. (9-16-35).

No sample description  
Total depth: 32.7 ft.

**Test Hole #126-A-35**  
**(A18-1-28cddd)**  
**Platte County**

Location: SE corner SW sec. 28, T. 18 N., R. 1 E.

Ground elevation: 1,512.0 ft. (i). (Columbus 7.5 min. quadrangle)

Depth to water: 70.3 ft. (11-1-35).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Top soil.....	0.0	2.0
Silt.....	2.0	23.0
Sand.....	23.0	76.0
Gravel; contains blue clay at 99 ft.....	76.0	99.0

**Test Hole #119-A-35**  
**(A18-1-31accc)**  
**Platte County**

Location: SW corner NE sec. 31, T. 18 N., R. 1 E.

Ground elevation: 1,535.0 ft. (i). (Columbus 7.5 min. quadrangle)

Depth to water: 83.0 ft. (11-1-35).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Top soil.....	0.0	3.0
Silt.....	3.0	25.0
Sand.....	25.0	70.0
Gravel.....	70.0	108.0

Test Hole #120-A-35  
(A18-1-31acbc)  
Platte County

Location: SW NW SW NE sec. 31, T. 18 N., R. 1 E.  
Ground elevation: 1,509.0 ft. (i). (Columbus 7.5 min. quadrangle)  
Depth to water: 53.6 ft. (8-28-35).

**Quaternary System, undifferentiated:**

Top soil.....	0.0	6.0
Silt.....	6.0	21.0
Sand.....	21.0	46.0
Gravel.....	46.0	88.0

**Test Hole #122-A-35**  
**(A18-1-31adda)**  
**Platte County**

Location: NE SE SE NE sec. 31, T. 18 N., R. 1 E., approximately 0.4  
mile south of northeast corner.

Ground elevation: 1,510.0 ft. (t). (Columbus 7.5 min. quadrangle)

Depth to water: 55.8 ft. (9-24-35).

No sample description

Total depth: 85 ft.

**Test Hole #124-A-35**  
**(A18-1-32dccc)**  
**Platte County**

Location: SW corner SE sec. 32, T. 18 N., R. 1 E.  
Ground elevation: 1,512.0 ft. (i). (Columbus 7.5 min. quadrangle)  
Depth to water: 64.4 ft. (8-12-35).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Silt.....	0.0	25.0
Sand, silty.....	25.0	45.0
Sand; fine texture.....	45.0	77.0

**Test Hole #125-A-35**  
**(A18-1-33cbbb)**  
**Platte County**

Location: NW corner SW sec. 33, T. 18 N., R. 1 E.

Ground elevation: 1,505.0 ft. (i). (Columbus 7.5 min. quadrangle)

Depth to water: 57.0 ft. (8-16-35).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Soil.....	0.0	4.0
Silt.....	4.0	26.0
Sand; fine texture.....	26.0	42.0
Sand; coarse texture.....	42.0	68.0
Gravel.....	68.0	80.0
Clay, blue.....	80.0	110.0



**Test Hole #129-A-35**  
**(A18-1-33daaa)**  
**Platte County**

Location: NE corner SE sec. 33, T. 18 N., R. 1 E.

Ground elevation: 1,493.0 ft. (i). (Columbus 7.5 min. quadrangle)

Depth to water: 53.7 ft. (8-22-35).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Top soil.....	0.0	4.0
Silt.....	4.0	24.0
Sand.....	24.0	76.0

**Test Hole #1-A-55**  
**(18-1-11adaa)**  
**Platte County**

Location: NE corner SE NE sec. 11, T. 18 N., R. 1 W., approximately 1,365 feet south and 7 feet west of northeast corner.

Ground elevation: 1,627.0 ft. (t). (Platte Center 7.5 min. quadrangle)

Depth to water: Unknown. Test hole caved at 87 ft.

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Road fill.....	0.0	1.7
Soil, silt, moderately clayey, medium brownish gray.	1.7	2.5
Silt, moderately clayey, light brown; light yellowish gray below 3 ft.....	2.5	5.0
Silt, slightly clayey, slightly calcareous below 12 ft., light yellowish brown.....	5.0	27.0
Silt, slightly calcareous, light yellowish gray; noncalcareous below 30 ft; brown tint and contains some mottled light gray.....	27.0	33.0
Silt, moderately to very clayey, medium brownish gray; contains a trace of sand.....	33.0	36.5
Silt, slightly sandy, light brown; contains fine to medium sand.....	36.5	37.5
Silt, very clayey, moderately sandy, light brown; contains fine to medium sand.....	37.5	40.0
Silt, moderately clayey, light brown; contains a trace of fine to medium sand.....	40.0	44.0
Silt, very clayey, slightly sandy, light brown; contains very fine to fine sand.....	44.0	52.5
Silt, very clayey, light gray; in part sandy from 55 to 56.5 ft; contains very fine to fine sand; contains some sandy silt and fine to coarse sand below 60.3 ft.....	52.5	61.8
Clay, silty, light gray.....	61.8	64.0
Silt, moderately to very clayey, slightly sandy, light gray; contains very fine to fine sand below 65 ft.....	64.0	73.5
Silt, slightly clayey, light gray; texture grades from coarse silt to very fine sand.....	73.5	79.0
Sand, light gray with some yellowish brown; texture grades from very fine to fine sand.....	79.0	80.0
Sand; texture grades from very fine to fine with some medium sand; contains one or two thin silt layers from 90 to 95 ft.....	80.0	105.0
Sand; texture grades from very fine to medium with some coarse sand; contains rounded clay grains, greenish gray.....	105.0	108.0

Silt, moderately to in part very clayey, light olive gray; slightly sandy below 111 ft.....	108.0	112.0
Sand; texture grades from medium to coarse with some very coarse sand and a trace of fine gravel.....	112.0	115.0
Silt, slightly to moderately clayey, slightly sandy, light olive gray.....	115.0	117.5
Sand; texture grades from very fine to coarse with some very coarse sand; slightly finer textured from 120 to 125 ft; principally very fine to medium sand from 125 to 130 ft; slightly silty from 126 to 127 ft.....	117.5	135.0
Sand; texture grades from very fine to medium with some coarse sand; slightly iron stained to 138 ft., and highly iron stained below 138 ft.....	135.0	140.0
Sand; texture grades from fine to coarse sand; moderately iron stained.....	140.0	142.5
Silt, very clayey, light gray with some yellowish brown.....	142.5	143.5
Sand and gravel; texture grades from medium sand to fine gravel (about 50 percent very coarse sand to fine gravel); contains a thin silt layer at 145 ft; contains many dark silicates.....	143.5	145.0
Sand; texture grades from very fine to coarse with a little very coarse sand.....	145.0	148.0
Till, silt, moderately to very clayey, slightly sandy, moderately calcareous, medium dark gray....	148.0	190.5
Sand; texture grades from very fine to fine with some medium sand.....	190.5	207.5
Sand and gravel, moderately calcareous; texture grades from fine sand to fine gravel with some medium gravel (contains 15 to 20 percent gravel)...	207.5	208.5
<b>Cretaceous System - Upper Cretaceous Series - Colorado Group:</b>		
<b>Niobrara Formation:</b>		
Shale, light to medium gray, chalky.....	208.5	211.5
<b>Carlile Formation:</b>		
Shale, medium gray, clay, slightly calcareous.....	211.5	225.0
Shale, medium gray, clay.....	225.0	240.0

**Test Hole #1-A-42**  
**(18-1-23bccc)**  
**Platte County**

Location: SW SW SW NW sec. 23, T. 18 N., R. 1 W., approximately 2,640 feet south and 110 feet east of northwest corner.

Ground elevation: 1,505.0 ft. (t). (Platte Center 7.5 min. quadrangle)

Depth to water: 7.3 ft. (7-8-42).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Road fill.....	0.0	3.0
Clay, silty to sandy, buff to brown.....	3.0	21.0
Silt, green to gray.....	21.0	30.0
Silt to clay, silty, dark gray; contains a few pebbles and shells.....	30.0	48.0
Gravel, gray; fine texture.....	48.0	52.0
Clay, dark gray; contains some pebbles.....	52.0	62.0
Silt to clay, silty, dark gray; contains a few lime pebbles.....	62.0	85.0
Gravel, pink to gray; texture grades from fine to very coarse.....	85.0	95.0
<b>Cretaceous System - Upper Cretaceous Series - Colorado Group:</b>		
<b>Carlile Formation:</b>		
Shale, dark gray to black with iron-stain.....	95.0	110.0

**Test Hole #118-A-35  
(A18-1-25ddda)  
Platte County**

Location: NE SE SE SE sec. 25, T. 18 N., R. 1 W., approximately 500 ft. north of southeast corner.

Ground elevation: 1,526.0 ft. (t). (Columbus 7.5 min. quadrangle)

Depth to water: 75.63 ft. (9-23-35).

No sample description

Total depth: 102.0 ft.

**Test Hole #103-A-35**  
**(18-1-26cccc)**  
**Platte County**

Location: SW corner sec. 26, T. 18 N., R. 1 W.

Ground elevation: 1,526.0 ft. (i). (Duncan 7.5 min. quadrangle)

Depth to water: 54.8 ft. (8-29-35).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Soil.....	0.0	2.0
Silt.....	2.0	23.0
Sand.....	23.0	45.0
Sand with some gravel.....	45.0	70.0
Gravel.....	70.0	88.0

**Test Hole #93-A-35**  
**(A18-1-27bcbb)**  
**Platte County**

Location: NW corner SW sec. 27, T. 18 N., R. 1 W.  
Ground elevation: 1,524.0 ft. (t). (Platte Center 7.5 min.  
quadrangle)  
Depth to water: 35.63 ft. (9-12-35).

No sample description  
Total depth: 59.85 ft.

**Test Hole #94-A-35**  
**(18-1-27cccc)**  
**Platte County**

Location: SW corner sec. 27, T. 18 N., R. 1 W.

Ground elevation: 1,529.0 ft. (t). (Duncan 7.5 min. quadrangle)

Depth to water: 73.5 ft. (8-29-35).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Soil.....	0.0	2.0
Silt.....	2.0	22.0
Sand.....	22.0	50.0
Gravel.....	50.0	88.0



**Test Hole #98-A-35**  
**(18A-1-27dccc)**  
**Platte County**

Location: SW corner SE sec. 27, T. 18 N., R. 1 W.  
Ground elevation: 1,520.0 ft. (t). (Duncan 7.5 min. quadrangle)  
Depth to water: 50.69 ft. (9-12-35).

No sample description  
Total depth: 81.5 ft.

**Test Hole #99-A-35**  
**(18A-1-27 ddcc)**  
**Platte County**

Location: SW corner SE SE sec. 27, T. 18 N., R. 1 W.  
Ground elevation: 1,525.0 ft. (t). (Duncan 7.5 min. quadrangle)  
Depth to water: 54.22 ft. (9-13-35).

No sample description  
Total depth: 72.85 ft.

**Test Hole #102-A-35**  
**(A18-1-27addd)**  
**Platte County**

Location: SE corner NE sec. 27, T. 18 N., R. 1 W.  
Ground elevation: 1,517.0 ft. (t). (Platte Center 7.5 min.  
quadrangle)  
Depth to water: 48.19 ft. (9-14-35).

No sample description  
Total depth: 64.05 ft.

**Test Hole #2-A-42**  
**(18-1-27dddd)**  
**Platte County**

Location: SE SE SE SE sec. 27, T. 18 N., R. 1 W., approximately 225 feet west of southeast corner.

Ground elevation: 1,521.0 ft. (i). (Duncan 7.5 min. quadrangle)

Depth to water: 49.5 ft. (7-8-42).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Clay, dark reddish brown.....	0.0	6.0
Clay, silty, buff; contains a trace of gravel.....	6.0	37.0
Gravel; texture grades from fine to medium with some coarse.....	37.0	48.0
Sand, red; fine texture; contains a trace of fine gravel.....	48.0	55.0
Gravel, red; texture grades from fine to medium.....	55.0	61.0
Sand, red; fine texture.....	61.0	65.0
Gravel, red; texture grades from fine to medium.....	65.0	67.0
Clay, iron-stained.....	67.0	67.5
Gravel, red; texture grades from medium to very coarse with some fine gravel; finer below 75 ft...	67.5	80.0
Gravel, red; texture grades from fine to coarse.....	80.0	85.0
Gravel, red; very coarse texture.....	85.0	90.0
Gravel, red; texture grades from fine to medium with some coarse.....	90.0	94.0
Gravel, red; texture grades from fine to coarse.....	94.0	109.5
Clay, green to gray.....	109.5	110.5
Gravel, green and red; texture grades from fine to medium.....	110.5	115.0
Gravel, green and red; texture grades from fine to coarse; contains some clay below 119 ft.....	115.0	138.0
Sand and gravel, green; texture grades from sand to medium gravel; contains some sandy clay.....	138.0	145.0
Clay, sandy, gray; contains some gravel.....	145.0	148.5
<b>Cretaceous System - Upper Cretaceous Series - Colorado Group:</b>		
<b>Carlile Formation:</b>		
Shale, gray to yellow with iron-stain, sandy.....	148.5	150.0
Shale, dark gray with iron stain.....	150.0	155.0
Shale, dark gray to black.....	155.0	160.0

Test Hole #92-A-35  
(18A-1-28dcbc)  
Platte County

Location: SW NW SW SE sec. 28, T. 18 N., R. 1 W.  
Ground elevation: 1,535.0 ft. (t). (Duncan 7.5 min. quadrangle)  
Depth to water: 63.48 ft. (9-26-98).

No sample description  
Total depth: 91.0 ft.

**Test Hole #88-A-35**  
**(A18-1-29bddd)**  
**Platte County**

Location: SE corner NW sec. 29, T. 18 N., R. 1 W.  
Ground elevation: 1,505.0 ft. (t). (Platte Center 7.5 min.  
quadrangle)  
Depth to water: 25.43 ft. (9-5-35).

No sample description  
Total depth: 46.9 ft.

**Test Hole #89-A-35**  
**(A18-1-29addc)**  
**Platte County**

Location: SW SE SE NE sec. 29, T. 18 N., R. 1 W.  
Ground elevation: 1,510.0 ft. (t). (Platte Center 7.5 min.  
quadrangle)  
Depth to water: 26.99 ft. (9-6-35).  
  
No sample description  
Total depth: 38.5 ft.

**Test Hole #85-A-35**  
**(18-1-30aada)**  
**Platte County**

Location: NE SE NE NE sec. 30, T. 18 N., R. 1 W.

Ground elevation: 1,515.0 ft. (i). Platte Center 7.5 min. quadrangle)

Depth to water: 19.5 ft. 8-30-35).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Soil.....	0.0	1.0
Silt.....	1.0	20.0
Sand, silty, gray.....	20.0	45.0
Gravel.....	45.0	61.0



Test Hole #86-A-35  
(18-1-30addd)  
Platte County

Location: SE corner NE sec. 30, T. 18 N., R. 1 W.

Ground elevation: 1,515.0 ft. (i). (Platte Center 7.5 min.  
quadrangle)

Depth to water: 32.8 ft. (9-3-35).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Soil.....	0.0	3.0
Silt.....	3.0	22.0
Sand.....	22.0	30.0
Gravel.....	30.0	45.0

**Test Hole #95-A-35**  
**(A18-1-33aaab)**  
**Platte County**

Location: NW NE NE NE sec. 33, T. 18 N., R. 1 W.  
Ground elevation: 1,530.0 ft. (t). (Duncan 7.5 min. quadrangle)  
Depth to water: 59.17 ft. (9-7-35).

No sample description  
Total depth: 71.0 ft.

**Test Hole #4-A-42**  
**(18-1-35cccc)**  
**Platte County**

Location: SW corner sec. 35, T. 18 N., R. 1 W., approximately 95 feet north of southwest corner.

Ground elevation: 1,539.0 ft. (i). (Duncan 7.5 min. quadrangle)

Depth to water: 74.6 ft. (7-8-42).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Road fill and soil, clay, dark brown to black.....	0.0	5.0
Clay, silty, dark brown to light brownish buff.....	5.0	10.0
Clay, silty, buff.....	10.0	24.0
Clay, silty, buff with iron-stain.....	24.0	28.0
Clay, silty to sandy, buff to gray; contains a trace of gravel below 32 ft.....	28.0	35.0
Sand, red; texture grades from fine to coarse with some fine gravel.....	35.0	43.0
Sand and gravel, red; texture grades from coarse sand to fine gravel.....	43.0	54.0
Gravel, red; texture grades from fine to medium.....	54.0	65.0
Sand, green, cemented.....	65.0	67.0
Gravel, red; texture grades from fine to medium.....	67.0	80.0
Sand; texture fine with some coarse sand and a trace of fine gravel.....	80.0	83.0
Gravel, red; medium texture.....	83.0	91.0
Gravel, red; coarse texture.....	91.0	100.0
Sand, red; texture grades from fine to coarse with some fine gravel.....	100.0	112.0
Gravel, red and some black; texture grades from fine to coarse.....	112.0	119.0
Clay, tan.....	119.0	120.0
Gravel, red and black; texture grades from fine to coarse gravel.....	120.0	122.0
Gravel, red; texture grades from medium to coarse...	122.0	126.0
Gravel, red; texture very coarse with some large pebbles.....	126.0	144.0
Gravel; texture grades from fine to coarse; contains some tan clay.....	144.0	146.0
Clay, sandy, greenish gray to pink.....	146.0	149.0
Clay, sandy, pinkish tan; contains some embedded gravel.....	149.0	155.0
Gravel, red; coarse texture, possibly contains some clay.....	155.0	158.0
Clay, sandy, tan to pink.....	158.0	164.0
Gravel, light red; texture grades from medium to coarse.....	164.0	172.0
Clay, sandy, brownish gray to pink, less pink below 190 ft.....	172.0	199.0

Clay, sandy, dark gray.....	199.0	202.0
<b>Cretaceous System - Upper Cretaceous Series - Colorado Group:</b>		
<b>Carlile Formation:</b>		
Clay or shale, light gray to green.....	202.0	210.0
Shale, greenish gray to green with iron-stain.....	210.0	220.0
Shale, dark gray to black.....	220.0	230.0

**Test Hole #104-A-35**  
**(A18-1-35abaa)**  
**Platte County**

Location: NE NE NW NE sec. 35, T. 18 N., R. 1 W.  
Ground elevation: 1,529.0 ft. (t). (Duncan 7.5 min. quadrangle)  
Depth to water: 61.13 ft. (9-16-35).

No sample description  
Total depth: 81.4 ft.

**Test Hole #108-A-35**  
**(A18-1-35ddad)**  
**Platte County**

Location: SE NE SE SE sec. 35, T. 18 N., R. 1 W.  
Ground elevation: 1,528.0 ft. (t). (Duncan 7.5 min. quadrangle)  
Depth to water: 69.3 ft. (9-20-35).

No sample description  
Total depth: 88.0 ft.

**Test Hole #109-A-35**  
**(A18-1-35aadd)**  
**Platte County**

Location: SE SE NE NE sec. 35, T. 18 N., R. 1 W.  
Ground elevation: 1,535.0 ft. (t). (Duncan 7.5 min. quadrangle)  
Depth to water : 70.26 ft. (9-17-35).

No sample description  
Total depth: 92.0 ft.

**Test Hole #110-A-35**  
**(A18-1-36dccc)**  
**Platte County**

Location: SW SW SW SE sec. 36, T. 18 N., R. 1 W.  
Ground elevation: 1,530.0 ft. (t). (Duncan 7.5 min. quadrangle)  
Depth to water: 61.76 ft. (9-20-35).

No sample description  
Total depth: 81.1 ft.



**Test Hole #17-A-42**  
**(18-2-29cccc)**  
**Platte County**

Location: SW corner sec. 29, T. 18 N., R. 2 W., approximately 75 feet north of southwest corner.

Ground elevation: 1,589.0 ft. (i). (Monroe 7.5 min. quadrangle)

Depth to water: 62.4 ft. (7-20-42).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Road fill.....	0.0	3.0
Clay, granular, dark brown.....	3.0	5.0
Clay, silty, brown to buff.....	5.0	10.0
Silt to clay, silty, buff.....	10.0	37.0
Silt, buff; contains a trace of gravel.....	37.0	40.0
Silt to sand, silty, buff; contains a trace of red gravel.....	40.0	52.0
Clay, silty, buff.....	52.0	59.0
Sand and gravel, silty, buff; texture grades from sand to fine gravel.....	59.0	70.0
Sand, light tan; very fine texture.....	70.0	93.0
Sand and gravel, buff to red; texture grades from sand to fine gravel.....	93.0	103.0
Gravel, red; texture grades from fine to coarse.....	103.0	110.0
Gravel, red; texture grades from fine to medium with a trace of coarse.....	110.0	114.0
Gravel, red; texture grades from fine to coarse.....	114.0	120.0
Gravel, red; contains some pebbles.....	120.0	123.0
Gravel, red; texture grades from fine to medium.....	123.0	128.0
Gravel, red; texture grades from fine to coarse; contains some pebbles.....	128.0	137.5
Clay, greenish gray.....	137.5	140.0
<b>Cretaceous System - Upper Cretaceous Series - Colorado Group:</b>		
<b>Niobrara Formation:</b>		
Shale, white.....	140.0	141.0
Shale, light yellow.....	141.0	143.0
Shale, dark gray to brown.....	143.0	145.0
Shale, olive gray to light gray.....	145.0	150.0

**Test Hole #18-A-42**  
**(18-2-31ddddd)**  
**Platte County**

Location: SE SE SE SE sec. 31, T. 18 N., R. 2 W., approximately 105 feet west of southeast corner.

Ground elevation: 1,519.0 ft. (i). (Monroe 7.5 min. quadrangle)

Depth to water: 13.2 ft. (7-20-42).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Road fill.....	0.0	2.0
Clay, dark brown to black.....	2.0	4.0
Clay, gray to buff.....	4.0	8.5
Silt, buff; contains concretions.....	8.5	10.0
Clay, silty, buff to gray.....	10.0	16.0
Clay, silty, gray.....	16.0	23.0
Gravel, red; texture grades from fine to medium.....	23.0	26.0
Gravel, red; coarse texture.....	26.0	35.0
Clay, tan to gray.....	35.0	37.0
Clay, white.....	37.0	38.0
Clay, tan to gray.....	38.0	44.0
Gravel, red and yellow; texture grades from fine to coarse.....	44.0	54.5
Clay, sandy, pink to gray.....	54.5	56.0
Gravel, red; texture grades from fine to coarse.....	56.0	59.5
Clay, tan.....	59.5	64.0
Clay, yellow to tan.....	64.0	65.0
Clay, sandy, dark brown.....	65.0	69.0
Gravel, red; fine texture.....	69.0	70.0
Clay, sandy, dark brown.....	70.0	73.0
Clay, sandy, greenish gray.....	73.0	78.0
Clay, sandy, to sand, clayey, light gray.....	78.0	81.0
Clay, sandy, white; contains reworked shale.....	81.0	83.0
<b>Cretaceous System - Upper Cretaceous Series - Colorado Group:</b>		
<b>Niobrara Formation:</b>		
Shale, white, chalky.....	83.0	85.0
Shale, yellow, chalky.....	85.0	88.5
Shale, white, chalky.....	88.5	90.0
Shale, yellow, chalky.....	90.0	93.0
Shale, white, chalky.....	93.0	94.5
Shale, yellow, chalky.....	94.5	97.0
Shale, light gray.....	97.0	100.0

**Test Hole #76-A-35**  
**(A18-2-35daaa)**  
**Platte County**

Location: NE corner SE sec. 35, T. 18 N., R. 2 W.  
Ground elevation: 1,492.0 ft. (t). (Monroe 7.5 min. quadrangle)  
Depth to water: 7.08 ft. (9-4-35).

No sample description  
Total depth: 17.0 ft.

**Test Hole #77-A-35**  
**(18A-2-35aaaa)**  
**Platte County**

Location: NE corner sec. 35, T. 18 N., R. 2 W., approximately 75 feet south of northeast corner.

Ground elevation: 1,496.0 ft. (t). (Monroe 7.5 min. quadrangle)

Depth to water: 5.35 ft. (9-4-35).

No sample description

Total depth: 22.0 ft.

**Test Hole #25-A-55**  
**(18-3-13ddddd)**  
**Platte County**

Location: SE SE SE SE sec. 13, T. 18 N., R. 3 W., approximately 183 feet north and 6 feet west of southeast corner.

Ground elevation: 1,708.0 ft. (t). (Tarnov 7.5 min. quadrangle)

Depth to water: 129.5 ft. (8-19-55).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Road fill.....	0.0	1.0
Soil, silt, slightly clayey, dark brownish gray.....	1.0	2.0
Silt, moderately to very clayey, medium yellowish brown.....	2.0	5.5
Silt, slightly clayey, light yellowish brown.....	5.5	6.5
Silt, slightly clayey, slightly calcareous, light yellowish brown; contains many large limy nodules; some gray mottling below 10 ft.....	6.5	14.0
Silt, slightly to moderately clayey, slightly calcareous, light yellowish brown with some gray mottling; contains a trace of snail shells from 15 ft.....	14.0	30.0
Silt, slightly to moderately clayey, light yellowish brown; light brownish gray gray below 33 ft.....	30.0	34.0
Silt, slightly to very clayey, dark to medium brownish gray.....	34.0	38.5
Silt, moderately to very clayey, medium brown.....	38.5	49.0
Clay, very silty, medium brown; contains mottled black below 60 ft.....	49.0	62.5
Silt, moderately to very clayey, medium brown; contains a trace of very fine to medium sand and a bone fragment from 65 to 67 ft.....	62.5	72.5
Clay, very silty, medium brown.....	72.5	75.0
Clay, very silty, slightly calcareous, medium brown; contains some white limy areas.....	75.0	77.0
Silt, slightly to moderately clayey, slightly calcareous, medium brown.....	77.0	78.5
Silt, slightly clayey, medium brown; granular texture; slightly consolidated below 82 ft.....	78.5	83.2
Silt, slightly clayey, medium brownish gray; granular texture.....	83.2	87.0
Silt, moderately to very clayey, light brown; contains limy nodules at 97.5 ft.....	87.0	100.0
Silt, moderately to very clayey, slightly to moderately calcareous, light brown; noncalcareous from 105.5 to 107 ft; contains limy areas at 100.8 ft. and from 102.1 to 102.7 ft. and 110 to 112 ft.	100.0	117.0
Silt, slightly clayey, marly, white to light brown; slightly consolidated.....	117.0	118.0

Silt, slightly to moderately clayey, slightly to moderately calcareous, light brown; slightly sandy from 120 to 125 ft; contains very fine to medium sand; contains white limy area at 119 ft; slightly consolidated below 125 ft.....	118.0	129.5
Silt, moderately clayey, slightly sandy, light brown; contains very fine to fine sand.....	129.5	131.5
Silt, moderately clayey, very sandy, light brown; contains fine to medium sand.....	131.5	135.0
Silt, slightly clayey, very sandy, light brown; contains fine to coarse sand.....	135.0	139.0
Silt, moderately clayey, moderately sandy, light brown; contains fine to medium sand.....	139.0	140.0
Silt, slightly clayey, very sandy, light yellowish gray; contains fine to medium sand.....	140.0	141.0
Silt, very clayey, slightly sandy, light yellowish gray; contains fine to medium sand.....	141.0	144.0
Silt, slightly to moderately clayey, moderately to very sandy, light yellowish gray with a brown tint; contains fine to medium sand with some coarse sand below 145 ft.....	144.0	146.0
Sand, in part silty, light yellowish gray; contains fine to medium sand with some very coarse sand....	146.0	149.7
Silt, moderately clayey, slightly to moderately sandy, light brownish gray.....	149.7	153.6
Sand; texture grades from medium to coarse sand and fine gravel with some medium gravel (contains 5 percent gravel).....	153.6	160.0
Sand and gravel; texture grades from coarse sand to fine to medium gravel (contains 15 to 20 percent gravel).....	160.0	165.0
Sand; texture grades from medium to coarse with some fine to medium gravel (contains 5 percent gravel)..	165.0	170.0
Sand and some gravel; texture grades from medium sand to medium gravel (contains 25 percent gravel)	170.0	175.0
Sand; texture grades from medium to coarse with some very coarse sand and a trace of fine gravel.....	175.0	181.0
Sand and some gravel; texture grades from fine sand to medium gravel (contains 25 percent gravel)....	181.0	192.3
Silt, slightly clayey, slightly sandy, light yellowish gray.....	192.3	193.5
Sand; texture grades from fine to coarse sand with a trace of fine gravel below 195 ft.....	193.5	196.0
Silt, very sandy, light olive gray.....	196.0	200.0
Silt, slightly clayey, light brownish gray; contains nodular layer from 202.3 to 202.6 ft. and at 204 ft.....	200.0	205.5
Silt, moderately to very clayey, light yellowish gray.....	205.5	207.0
Clay, very silty, light brownish gray.....	207.0	210.0
Silt, very clayey, light brownish gray; contains a trace of fine sand.....	210.0	212.0

Sand, very silty, light brownish gray; texture of sand very fine grained.....	212.0	221.4
Silt, slightly clayey, moderately to in part very sandy, light brownish gray.....	221.4	224.0
Silt, very clayey, light brownish gray; contains a trace of very fine sand.....	224.0	225.5
Silt, slightly clayey, moderately sandy, light brownish gray; coarse textured.....	225.5	234.5
Clay, very silty, light brownish gray; coarse textured.....	234.5	237.5
Silt, slightly to moderately clayey, slightly sandy, light brownish gray.....	237.5	240.5
Silt, slightly to moderately clayey, light olive gray; very calcareous and contains limestone nodules below 245 ft.....	240.5	250.5
Sand; texture grades from coarse sand to fine gravel; contains a trace of medium gravel to 255 ft; contains medium sand below 260 ft.....	250.5	270.0
Sand; texture grades from medium to very coarse sand; contains a trace of fine gravel below 275 ft; contains light gray silicates below 280 ft....	270.0	282.0
Clay, moderately to very silty, light olive gray; light brownish gray below 285.5 ft.....	282.0	286.5
Silt, moderately to very clayey, light olive gray...	286.5	294.5
Silt, slightly to moderately clayey, light olive gray; contains very fine sand from 294.5 to 296 ft. and from 297.5 to 298 ft.....	294.5	300.0
Silt, slightly clayey, moderately to in part very sandy, light olive gray; contains coarse silt to very fine sand.....	300.0	306.5
Sand and gravel, very silty, light olive gray; texture grades from medium sand to medium gravel; contains limestone and aragonite fragments.....	306.5	308.0
<b>Cretaceous System - Upper Cretaceous Series - Colorado Group:</b>		
<b>Niobrara Formation:</b>		
Shale, light olive gray, chalky.....	308.0	312.5
Shale, light to medium gray and light to medium olive gray, chalky.....	312.5	314.5
Shale, medium brownish gray, chalky.....	314.5	318.5
Shale, light gray to light brownish gray, chalky....	318.5	320.0
Shale, light brownish gray to medium olive gray, chalky.....	320.0	321.5
Shale, light gray, chalky.....	321.5	330.0

**Test Hole #4-A-55**  
**(A19-1-6bbbc)**  
**Platte County**

Location: SW NW NW NW sec. 6, T. 19 N., R. 1 E., approximately 335 feet south and 9 feet east of northwest corner.

Ground elevation: 1,676.0 ft. (a). (Creston 7.5 min. quadrangle)

Depth to water: 78.8 ft. (6-27-55).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Road fill.....	0.0	1.0
Soil, silt, moderately clayey, dark gray.....	1.0	2.0
Silt, very clayey, medium brown.....	2.0	5.0
Silt, slightly to moderately clayey, slightly calcareous below 13.5 ft., light brown.....	5.0	34.7
Silt, slightly clayey, medium gray.....	34.7	35.0
Silt, slightly to moderately clayey, dark gray.....	35.0	36.5
Clay, very silty, medium brown; contains very fine to fine sand below 40 ft.....	36.5	45.0
Silt, moderately to very clayey, moderately to very sandy, medium brown; contains very fine to medium sand with a trace of coarse sand from 45 to 50 ft.	45.0	53.1
Clay, moderately to in the most part very silty, moderately to slightly sandy, medium brown; contains very fine to medium sand; contains a dark gray silt at 53.1 ft.....	53.1	74.5
Silt, very clayey, slightly to moderately calcareous, light gray.....	74.5	76.1
Clay, very silty, light olive gray; contains a trace of very fine to fine sand; contains some limy nodules; slightly calcareous below 80 ft.....	76.1	81.5
Silt, very clayey, slightly calcareous, medium to light olive gray; contains a trace of very fine to fine sand from 82 to 85 ft; contains a light yellowish brown area at 88.5 ft.....	81.5	91.8
Sand, slightly calcareous; texture grades from very fine to medium with a trace of coarse sand.....	91.8	94.0
Silt, moderately clayey, moderately to very sandy, slightly calcareous, light olive gray; contains very fine to medium sand; slightly clayey and slightly sandy from 95 to 99.6 ft; medium olive gray and noncalcareous below 99.6 ft.....	94.0	100.2
Sand, very silty; texture grades from very fine to medium sand.....	100.2	105.0
Sand; texture grades from very fine to medium sand with some coarse sand below 110 ft.....	105.0	115.0



Sand; texture grades from very fine to coarse sand with some very coarse sand and a trace of fine gravel below 115 ft; contains a clay layer at 118.5 ft.....	115.0	119.5
Silt, moderately clayey, moderately sandy, medium olive gray; contains very fine to medium sand.....	119.5	121.0
Sand; texture grades from very fine to coarse sand with some very coarse sand.....	121.0	123.4
Silt, very clayey, very sandy, slightly to moderately calcareous, medium to light bluish gray; contains very fine to very coarse sand; contains some limy areas below 125 ft.....	123.4	128.5
Till, clay, very silty, slightly sandy to gravelly, moderately calcareous, medium olive gray; medium gray below 143.2 ft; mottled medium olive gray from 143.2 to 147 ft. and from 150 to 152.5 ft....	128.5	190.0
Sand, very silty, slightly calcareous, light gray; very fine grained.....	190.0	195.0
Silt, very sandy, slightly calcareous, light gray; contains very fine to fine sand; sand layer from 196 to 196.5 ft.....	195.0	199.1
Sand, in part silty, slightly calcareous; contains very fine to fine with some medium and a trace of coarse sand.....	199.1	210.0
Sand; texture grades from very fine to medium sand with some coarse sand.....	210.0	220.0
Sand; texture grades from very coarse sand with a trace of gravel below 225 ft; contains a sandy silt layer from 229.1 to 229.3 ft.....	220.0	235.0
Sand; texture grades from very fine to fine with some medium sand.....	235.0	237.5
<b>Cretaceous System - Upper Cretaceous Series - Colorado Group:</b>		
<b>Niobrara Formation:</b>		
Shale, medium gray, mottled light gray, chalky; slightly lighter below 254 ft.....	237.5	270.0

**Test Hole #3-A-55**  
**(19-1-13addd)**  
**Platte County**

Location: SE corner NE sec. 13, T. 19 N., R. 1 W., approximately 2,501 feet south and 12 feet west of northeast corner.

Ground elevation: 1,655.0 ft. (t). (Humphrey SE 7.5 min. quadrangle)

Depth to water: 93.8 ft. (6-20-55).

Depth, in feet  
From To

**Quaternary System, undifferentiated:**

Silt, slightly clayey, light brownish gray; contains a trace of limy nodules; contains a trace of snail shells.....	0.0	17.5
Silt, slightly clayey, medium brownish gray; medium brown below 18 ft.....	17.5	19.0
Clay, very silty, medium brown.....	19.0	22.0
Silt, moderately clayey, medium brown.....	22.0	24.0
Silt, slightly clayey, light brown; medium brown below 27 ft; medium gray layer at 28.8 ft.....	24.0	30.0
Clay, very silty, medium brown; medium olive gray below 30.5 ft.....	30.0	35.0
Silt, moderately to very clayey, moderately to in part very sandy, slightly calcareous, medium olive gray; light gray below 40 ft; contains very fine to fine sand; contains medium sand below 40 ft....	35.0	50.0
Clay, very silty, very sandy, slightly calcareous, light gray; contains very fine to very coarse sand; contains many limy nodules.....	50.0	57.0
Clay, very silty, slightly sandy, slightly calcareous, light gray; medium gray from 60 to 61 ft; contains very fine to fine sand; contains many white limy areas below 61 ft; moderately calcareous below 63.5 ft.....	57.0	65.0
Clay, moderately to very silty, slightly sandy, moderately calcareous, light gray; contains very fine to medium sand; very sandy, slightly calcareous below 70 ft.....	65.0	71.0
Sand, in part slightly silty to 80 ft; contains very fine to medium sand with a trace of coarse sand...	71.0	82.5
Silt, slightly to moderately clayey, slightly to moderately sandy, medium olive gray; contains very fine to fine sand.....	82.5	85.0
Silt, slightly clayey, very sandy, light olive gray; contains very fine sand.....	85.0	87.0
Sand; texture grades from very fine to fine; contains a trace of rootlets and slightly consolidated with silt from 87 to 89 ft; contains a thin silt layer from 90 to 95 ft; contains reworked clay grains and some medium sand below 95 ft.....	87.0	100.0

Sand; texture grades from very fine to very coarse sand with a trace of fine gravel.....	100.0	105.5
Clay, very silty, slightly to in part moderately sandy, slightly calcareous, medium gray; contains very fine to medium sand.....	105.5	107.0
Clay, very silty, slightly sandy, slightly calcareous, medium gray; medium olive gray below 113.5 ft; contains very fine to fine sand; moderately silty with very fine to very coarse sand below 110 ft; contains limy areas below 113.5 ft.....	107.0	115.5
Till, clay, very silty, slightly sandy, moderately calcareous, medium gray; mottled yellowish gray; contains interbedded silty sand and silty clay below 128 ft.....	115.5	130.0
Sand and some gravel, very silty; texture grades from very fine sand to coarse gravel (about 10 percent gravel).....	130.0	135.0
Sand and some gravel, moderately calcareous; texture grades from fine sand to fine gravel (about 10 percent gravel).....	135.0	138.0
Till, clay, very silty, slightly sandy to gravelly, moderately calcareous, medium olive gray; medium gray below 145 ft; mottled yellowish gray from 145 to 150 ft.....	138.0	180.0
Sand, quartz with some dark and green silicates, slightly calcareous; texture grades from fine to medium with some very fine and coarse sand.....	180.0	185.0
Sand, slightly calcareous; texture grades from fine to coarse; trace of very fine sand; trace of very coarse sand to 190 ft.....	185.0	195.0
Sand, quartz with pink, green and dark silicates and limestone grains, slightly calcareous; texture grades from fine to very coarse.....	195.0	200.0
Sand and gravel, slightly calcareous; texture grades from fine sand to fine gravel (about 35 percent gravel).....	200.0	205.0
Sand, slightly calcareous; texture grades from fine to coarse with a trace of very coarse sand.....	205.0	210.0
Sand, slightly calcareous; texture grades from fine sand to fine gravel (about 5 to 10 percent gravel)	210.0	215.0
Sand and gravel, slightly calcareous; texture grades from medium sand to fine gravel with a trace of medium gravel (about 50 percent gravel); slightly coarser textured sand below 220 ft. (about 60 percent gravel).....	215.0	225.0
Till, silt, very clayey, moderately sandy, moderately calcareous, medium gray.....	225.0	226.0
Sand and gravel, slightly calcareous; texture grades from medium sand to medium gravel (about 25 percent gravel); chalk boulder from 233.1 to 233.3 ft. (about 40 percent gravel below 230 ft.).....	226.0	235.0

Gravel and sand, slightly calcareous; texture grades from medium sand to medium gravel (about 20 percent sand); slightly more sand below 245 ft.....	235.0	248.5
Clay, very silty, slightly calcareous, medium gray; contains a few white limy areas; probably sand from 248.8 to 249.4 ft.....	248.5	250.0
Sand and gravel, slightly calcareous; texture grades from fine sand to fine gravel (about 25 percent gravel); contains considerable reworked shale; contains silt, moderately clayey, medium gray from 250.7 to 251.5 ft; (about 35 percent gravel below 255 ft.).....	250.0	260.0
Sand and some gravel, slightly calcareous; texture grades from medium sand to fine gravel (about 15 percent fine gravel); contains more very coarse sand below 265 ft. (about 20 percent fine gravel).	260.0	270.0
Sand and gravel, slightly calcareous; texture grades from medium sand to medium gravel; contains a chalk boulder from 273 to 273.5 ft; contains a shale boulder from 277.7 to 278 ft.....	270.0	280.6
Till, clay, moderately silty, slightly sandy, slightly calcareous, light gray; contains fine to coarse sand.....	280.6	285.0
Silt, moderately clayey, very sandy, light gray; contains very fine to medium sand.....	285.0	287.5
Sand; texture grades from very fine to medium with some coarse and a trace of fine gravel below 290 ft; contains a thin silt layer from 291.7 to 291.8 ft.....	287.5	295.0
Sand and some gravel; texture grades from fine sand to fine gravel (about 10 percent gravel with 25 percent gravel below 300 ft.).....	295.0	303.0
<b>Cretaceous System - Upper Cretaceous Series - Colorado Group:</b>		
<b>Carlile Formation:</b>		
Shale, medium gray, clayey, slightly calcareous.....	303.0	310.0

**Test Hole #2-A-55****(19-1-36aaab)****Platte County**

Location: NW NE NE NE sec. 36, T. 19 N., R. 1 W., approximately 11 feet south and 337 feet west of northeast corner.

Ground elevation: 1,653.0 ft. (t). (Humphrey SE 7.5 min. quadrangle)

Depth to water: Unknown. Test hole caved at 65.3 ft.

Depth, in feet  
From To

**Quaternary System, undifferentiated:**

Road fill.....	0.0	2.0
Soil, silt, moderately clayey, medium brownish gray.	2.0	3.0
Silt, moderately clayey, medium brown.....	3.0	4.0
Silt, slightly clayey, light brown; moderately clayey from 4 to 5.5 ft; slightly calcareous from 10 to 15 ft. and non-to slightly calcareous from 20 to 23 ft; slightly sandy below 20 ft.....	4.0	26.5
Sand, very silty, light brown; texture grades from very fine to fine sand.....	26.5	30.0
Silt, slightly clayey, very sandy, light brown; contains very fine to fine sand.....	30.0	32.5
Silt, slightly clayey, light yellowish gray; in part slightly sandy from 32.5 to 35 ft.....	32.5	37.5
Silt, moderately clayey, medium brownish gray.....	37.5	38.0
Silt, very clayey, slightly peaty, dark gray with a brown tint.....	38.0	41.3
Silt, very clayey, medium brownish gray; contains more clay from 44 to 45 ft.....	41.3	46.5
Silt, moderately to very clayey, slightly sandy, light brownish gray; light yellowish gray below 50 ft; contains very fine to fine sand.....	46.5	55.0
Sand, very fine grained.....	55.0	58.0
Silt, very clayey, slightly to in part very sandy, light gray; contains very fine to medium sand; slightly clayey, very sandy below 60 ft.....	58.0	60.8
Clay, very silty, in part slightly sandy, light gray; very sandy from 61.5 to 61.8 ft; contains very fine to medium sand.....	60.8	63.5
Silt, very clayey, moderately sandy, light gray; contains very fine to medium sand.....	63.5	64.0
Clay, very silty, moderately to in part very sandy, light gray; very sandy from 64.8 to 65 ft. and from 68.4 to 68.7 ft; contains very fine to medium sand.....	64.0	76.4
Sand; texture grades from very fine to fine with a trace of medium sand.....	76.4	78.0

Clay, very silty, light gray; slightly sandy; contains very fine to medium sand from 78 to 80 ft; trace of very fine to fine sand from 80 to 82.8 ft. and from 85 to 90 ft.....	78.0	90.0
Silt, moderately to very clayey, moderately to very sandy, light gray; contains very fine to fine sand	90.0	92.0
Clay, very silty, slightly sandy, medium gray; contains very fine to fine sand.....	92.0	93.5
Silt, slightly clayey, very sandy, light gray; slightly sandy, slightly calcareous below 95 ft; contains very fine to fine sand.....	93.5	97.0
Clay, very silty, slightly sandy, slightly calcareous, light gray; medium gray with a trace of snail shells below 98.8 ft; contains very fine to fine sand.....	97.0	100.0
Silt, very clayey, slightly sandy, slightly calcareous, light gray; contains very fine to fine sand; moderately clayey with limy areas from 102 to 103.2 ft; slightly clayey with coarse textured silt from 103.2 to 105 ft.....	100.0	105.0
Sand, very silty to 107.7 ft; texture grades from very fine to medium sand, slightly finer grained from 105 to 110 t. and from 120 to 125 ft.....	105.0	134.0
Silt, moderately clayey, slightly sandy, slightly calcareous, dark brownish gray; medium gray below 135 ft; contains very fine to fine sand; trace of sand below 140 ft; contains a dark brown silt layer at 142.7 ft.....	134.0	142.8
Sand; texture grades from very fine to fine with some medium sand.....	142.8	152.2
Silt, slightly clayey, slightly calcareous, dark gray.....	152.2	154.4
Sand, slightly calcareous; texture grades from very fine to medium with a trace of coarse sand.....	154.4	156.5
Silt, slightly clayey, slightly sandy, slightly calcareous, dark brownish gray; contains very fine to fine sand.....	156.5	157.0
Till, silt, very clayey, slightly sandy to gravelly, moderately calcareous, medium gray; contains more very coarse sand and fine gravel from 164 to 178 ft.....	157.0	180.0
Sand, very silty; texture grades from very fine to medium sand with some coarse sand.....	180.0	225.0
Sand, very silty, moderately calcareous; texture grades from very fine to very coarse sand with a trace of fine gravel; contains reworked clay grains; contains a silt layer from 236 to 236.5 ft.....	225.0	236.5
Sand and gravel; texture grades from medium sand to medium gravel (about 50 to 60 percent gravel).....	236.5	240.0

Sand and gravel; texture grades from medium sand to fine gravel with some medium gravel (about 35 percent gravel).....	240.0	245.0
Sand and some gravel, moderately calcareous; texture grades from fine sand to very coarse sand with some fine gravel; contains reworked clay grains...	245.0	247.0
<b>Cretaceous System - Upper Cretaceous Series - Colorado Group:</b>		
<b>Niobrara Formation:</b>		
Shale, light olive gray, chalky; very light gray to white from 247 to 248 ft.....	247.0	250.0
<b>Carlile Formation:</b>		
Shale, light olive gray, clayey; medium dark gray below 250.5 ft.....	250.0	270.0

**Test Hole #22-A-55**  
**(19-3-1ddddd)**  
**Platte County**

Location: SE SE SE SE sec. 1, T. 19 N., R. 3 W., approximately 296 feet north and 6 feet west of southeast corner.

Ground elevation: 1,741.0 ft. (t). (Cornlea 7.5 min. quadrangle)

Depth to water: Unknown. Test hole caved at 139.9 ft.

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Road fill and soil, dark brownish gray.....	0.0	1.5
Silt, moderately clayey, medium yellowish gray; very clayey from 2 to 3.5 ft.....	1.5	5.0
Silt, slightly clayey, slightly calcareous, light yellowish gray; slightly more gray from 17 to 18 ft., mottled black and yellowish brown below 30 ft; contains a trace from 20 to 25 ft. to many snail shells from 25 to 30 ft.....	5.0	35.0
Silt, slightly clayey, medium brownish gray with some mottling.....	35.0	35.7
Silt, slightly to moderately clayey, dark brownish gray.....	35.7	36.5
Silt, moderately clayey, medium brown; contains a trace of fine sand.....	36.5	37.2
Clay, very silty, medium brown; contains a trace of very fine to fine sand; slightly sandy; contains very fine to medium sand below 42 ft.....	37.2	45.0
Silt, very clayey, medium brown; contains a trace of very fine to fine sand.....	45.0	48.0
Clay, very silty, medium brownish gray; contains a trace of very fine to fine sand from 48 to 50 ft; medium brown below 50 ft.....	48.0	53.0
Silt, moderately to very clayey, light brown; medium brown below 56 ft; contains a trace of very fine to fine sand from 56 to 65 ft. and below 70 ft; slightly sandy; contains very fine to medium sand from 65 to 69.5 ft.....	53.0	71.5
Clay, very silty, medium brown with a gray tint; light brown below 78 ft; contains a trace of very fine to fine sand below 75 ft.....	71.5	80.0
Silt, very clayey, light brown; contains a trace of fine sand; moderately to very clayey, slightly sandy; contains very fine to medium sand below 89 ft.....	80.0	91.0
Clay, very silty, medium brownish gray; contains a trace of very fine to fine sand.....	91.0	93.5



Silt, moderately to very clayey, medium brownish gray; light brown below 95 ft; coarse textured from 93.5 to 95 ft; slightly clayey below 97 ft; slightly sandy; contains very fine to fine sand below 100 ft.....	93.5	103.3
Silt, slightly clayey, very sandy, light yellowish gray; contains very fine to fine sand.....	103.3	104.0
Silt, moderately clayey, medium brownish gray; contains a trace of very fine sand.....	104.0	105.5
Clay, very silty, medium brownish gray; contains a trace of very fine sand.....	105.5	107.5
Silt, moderately to in part very clayey, medium brown; moderately clayey and light brown below 110 ft.....	107.5	112.5
Silt, slightly clayey, medium brown; coarse textured; light brownish gray from 119 to 122 ft; light brown below 122 ft; probably contains ash from 132 to 134 ft; slightly calcareous from 119 to 120 ft.....	112.5	135.0
Silt, slightly clayey, light yellowish gray; contains a thin very dark gray silt layer.....	135.0	135.5
Silt, moderately clayey, light brown; slightly calcareous below 145 ft; contains limy nodules from 146 to 148 ft; moderately to very clayey below 150 ft.....	135.5	153.0
Clay, very silty, medium brown.....	153.0	158.0
Silt, moderately to very clayey, light brownish gray	158.0	161.5
Clay, very silty, light olive gray; mottled medium brown, trace of very fine to fine sand below 165 ft.....	161.5	167.0
Sand, brownish gray; texture grades from very fine to fine with some medium; contains a trace of coarse sand below 180 ft.....	167.0	184.1
Clay, very silty, light brownish gray; slightly sandy; contains very fine to fine sand from 184.1 to 185 ft; light brown with a trace of white limy areas and slightly calcareous below 185 ft.....	184.1	191.0
Silt, very clayey, slightly sandy, slightly calcareous, light brown; contains very fine to fine sand; slightly more sand below 195 ft.....	191.0	199.5
Silt, very clayey, slightly calcareous, light brownish gray; coarse textured from 199.5 to 205 ft; contains a trace of very fine sand from 206.5 to 210 ft; contains limy nodules from 210 to 212.5 ft; medium brown, mottled black below 212.5 ft....	199.5	215.0
Clay, very silty, slightly calcareous, light olive gray.....	215.0	218.0

Silt, slightly to moderately clayey, slightly calcareous, light olive gray; medium yellowish gray with a trace of very fine sand from 220 to 222 ft; medium olive gray, slightly to moderately sandy; contains very fine to fine sand from 222 to 223.5 ft.....	218.0	223.5
Sand, brownish gray; texture grades from very fine to fine with some medium sand; contains some coarse sand to a trace of fine gravel below 230 ft.....	223.5	235.0
Sand and some gravel; texture grades from medium sand to fine gravel with a trace of medium gravel (about 10 percent gravel); contains more very coarse sand from 240 to 250 ft. (about 25 percent gravel); (about 30 to 35 percent gravel from 250 to 253.8 ft.).....	235.0	253.8
Silt, very clayey, slightly to moderately sandy, light brown; contains very fine to medium sand....	253.8	256.0
Gravel; texture grades from very coarse sand to medium gravel (about 10 percent very coarse sand).	256.0	260.0
Sand and gravel; texture grades from very coarse sand to medium gravel (about 75 percent gravel); (about 50 to 60 percent gravel from 265 to 270 ft.); contains some coarse sand from 270 to 280 ft. (about 40 to 50 percent gravel from 270 to 275 ft. and 35 to 40 percent gravel from 275 to 280 ft.); contains some medium sand below 280 ft. (about 10 to 15 percent gravel).....	260.0	282.3
<b>Cretaceous System - Upper Cretaceous Series - Colorado Group:</b>		
<b>Niobrara Formation:</b>		
Shale, light brownish yellow, chalky; light medium gray below 295 ft; contains a trace of aragonite from 310 to 315 ft.....	282.3	320.0

**Test Hole #23-A-55**  
**(19-3-24dddd)**  
**Platte County**

Location: SE corner sec. 24, T. 19 N., R. 3 W., approximately 6 feet north and 29 feet west of the southeast corner.

Ground elevation: 1,582.0 ft. (t). (Tarnov 7.5 min. quadrangle)

Depth to water: Artesian water flow.

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Road fill and soil, medium brownish gray.....	0.0	1.5
Soil, silt, moderately clayey, dark grayish black...	1.5	4.0
Silt, slightly clayey, slightly calcareous, medium brownish gray.....	4.0	9.0
Silt, slightly clayey, dark brownish gray; slightly lighter below 10 ft; slightly calcareous from 13.5 to 15 ft; very clayey below 15 ft.....	9.0	15.5
Silt, moderately to very clayey, dark brownish gray; medium gray below 16 ft.....	15.5	16.5
Silt, moderately clayey, light olive gray; mottled blue and yellowish brown.....	16.5	19.0
Silt, moderately clayey, slightly calcareous, light gray; mottled blue.....	19.0	20.5
Silt, slightly clayey, slightly calcareous, medium gray; contains some limy rootlets and a trace of snail shells from 20 to 20.5 ft; slightly sandy to gravelly below 29.5 ft.....	20.5	31.0
Sand and some gravel, iron stained; texture grades from medium sand to fine gravel with some medium gravel; contains silt layer at 32.5 ft; slightly coarser below 35 ft. (about 10 percent gravel)....	31.0	38.5
Silt, moderately to very clayey, slightly sandy, moderately calcareous, medium brown; contains white limy areas; medium brownish gray, non-calcareous below 40 ft.....	38.5	43.0
Silt, moderately clayey, slightly calcareous, medium brownish gray; contains a trace of very fine to medium sand from 43 to 45 ft; contains white limy areas; light to medium brown from 45 to 50 ft; noncalcareous below 50 ft.....	43.0	55.0
Silt, very clayey, light brownish gray.....	55.0	61.5
Clay, very silty, slightly calcareous, light olive gray.....	61.5	65.5
Silt, very clayey, slightly calcareous, light olive gray.....	65.5	70.0
Silt, in part slightly to moderately clayey, medium brownish gray; very coarse silt to very fine to fine sand; granular textured; slightly consolidated.....	70.0	73.2

Silt, moderately to very clayey, slightly calcareous, light olive gray.....	73.2	79.5
Sand, brownish gray; texture grades from fine to medium with some coarse and a trace of very coarse sand.....	79.5	85.0
Sand, brownish gray; texture grades from medium to coarse with some very coarse sand; slightly finer grained; contains a trace of fine gravel and clay grains from 90 to 100 ft; trace of very coarse sand to fine gravel below 100 ft.....	85.0	105.0
Sand and some gravel, brownish gray; texture grades from medium sand to fine gravel (about 5 to 10 percent gravel).....	105.0	110.0
Sand and gravel; texture grades from coarse sand to fine gravel with some medium gravel (about 50 percent gravel); slightly finer below 115 ft. (about 25 percent gravel).....	110.0	119.5
Sand; texture grades from medium to very coarse with a trace of fine gravel; slightly silty from 119.5 to 121 ft. and from 137.4 to 140 ft; slightly finer grained from 125 to 135 ft; contains medium to coarse with some very coarse sand.....	119.5	150.0
Sand, slightly silty; texture grades from fine to coarse with some very coarse sand and a trace of fine gravel.....	150.0	155.0
Sand and some gravel; texture grades from medium sand to fine gravel (about 5 to 10 percent gravel)	155.0	165.0
Silt, slightly clayey, moderately sandy, light brownish gray.....	165.0	173.3
Sand; texture grades from medium to coarse with some very coarse sand and a trace of fine gravel.....	173.3	195.5
<b>Cretaceous System - Upper Cretaceous Series - Colorado Group:</b>		
<b>Niobrara Formation:</b>		
Shale, light yellowish gray, chalky.....	195.5	199.0
Shale, light to medium gray, chalky; contains a trace of aragonite from 210 to 215 ft.....	199.0	230.0

**Test Hole #24-A-55**  
**(19-3-36ddddd)**  
**Platte County**

Location: SE corner sec. 36, T. 19 N., R. 3 W., approximately 94 feet north and 8 feet west of southeast corner.

Ground elevation: 1,687.0 ft. (t). (Tarnov 7.5 min. quadrangle)

Depth to water: Unknown. Test hole caved at 92.9 ft.

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Soil, silt, slightly clayey, dark brownish gray.....	0.0	1.0
Silt, slightly to moderately clayey, medium yellowish gray.....	1.0	1.5
Silt, slightly clayey, medium yellowish gray.....	1.5	4.0
Silt, slightly clayey, light yellowish gray; slightly calcareous from 8 to 26 ft; contains a trace of snail shells below 8 ft; contains limy nodules and mottled brown and green from 17 to 23.5 ft; light brownish gray below 32 ft.....	4.0	33.5
Silt, moderately clayey, light brownish gray; mottled dark gray and brown.....	33.5	33.8
Silt, slightly to moderately clayey, medium brown; very clayey below 36 ft.....	33.8	37.0
Clay, very silty, light brown.....	37.0	41.5
Silt, moderately to very clayey, light brownish gray; light brown from 43.5 to 45.5 ft.....	41.5	47.0
Clay, very silty, light brown; contains many white limy areas, slightly to moderately calcareous below 48 ft.....	47.0	53.0
Silt, moderately to very clayey, light brown.....	53.0	53.5
Clay, very silty, light brown.....	53.5	54.5
Silt, very clayey, light brown; slightly to moderately clayey, slightly to moderately calcareous from 57 to 60 ft; slightly clayey from 64 to 65 ft; contains limy nodular area from 57 to 58.8 ft; contains a trace of very fine to fine sand from 61.5 to 64 ft.....	54.5	69.0
Clay, very silty, light olive gray.....	69.0	73.5
Silt, very clayey, medium brownish gray.....	73.5	75.5
Silt, slightly clayey, light olive gray; contains limy nodules, slightly calcareous below 77.5 ft...	75.5	86.5
Silt, granular texture, light brown; slightly to moderately clayey, medium brown below 94 ft.....	86.5	95.5
Silt, moderately clayey, light to medium brownish gray; coarse texture.....	95.5	100.0

Silt, slightly clayey, light olive gray; light gray below 102.3 ft; slightly sandy; contains very fine to medium sand from 110 to 115 ft; moderately clayey, medium gray below 112 ft; very sandy; contains fine to coarse sand below 115 ft; contains ash from 102.3 to 115 ft.....	100.0	115.5
Silt, moderately to very clayey, light olive gray...	115.5	118.5
Silt, slightly clayey, in part granular texture, light brown.....	118.5	119.5
Silt, slightly clayey, slightly to moderately calcareous, light brownish gray to light gray; contains limy nodules from 120 to 123 ft; granular texture below 123 ft.....	119.5	126.0
Silt, slightly clayey, slightly sandy, light gray; very fine grained; contains interbedded siltstone with some rootlets below 130 ft.....	126.0	135.0
Silt, light gray; very coarse silt to very fine sand; in part slightly consolidated.....	135.0	140.0
Sand, brownish gray; texture grades from very fine to fine sand.....	140.0	144.5
Silt, slightly to moderately clayey, light gray; slightly calcareous below 145 ft; light brown below 147.5 ft.....	144.5	150.0
Silt, slightly clayey, in part slightly sandy, slightly calcareous, light brown; contains some siltstone with rootlets from 150 to 154 ft; moderately clayey from 154 to 155 ft. and from 159 to 160 ft; contains some rootlets from 155 to 159 ft.	150.0	160.0
Silt, slightly to moderately clayey, slightly calcareous, light brown; contains very fine to fine sand from 160 to 163.5 ft; slightly sandy; contains fine to very coarse sand from 163.5 to 165 ft; noncalcareous; contains a trace of very fine to medium sand below 165 ft., light brownish gray below 167 ft.....	160.0	171.5
Silt, moderately clayey, light gray; contains a thin very fine iron stained sand layer below 173.5 ft..	171.5	175.0
Silt, slightly clayey, light olive gray; contains a trace of very fine sand.....	175.0	176.0
Silt, brownish gray; coarse textured to very fine sand.....	176.0	177.5
Silt, slightly clayey, light olive gray.....	177.5	180.0
Sand, brownish gray; texture grades from very fine to fine with some medium.....	180.0	185.0
Sand and gravel; texture grades from medium sand to fine gravel with a trace of medium gravel (about 30 percent gravel).....	185.0	189.7
Silt, slightly clayey, slightly sandy, light olive gray.....	189.7	190.3
Sand; texture grades from coarse to very coarse sand with a trace of gravel.....	190.3	195.0

Sand and some gravel; texture grades from coarse sand to fine gravel with a trace of medium gravel (about 10 percent gravel); slightly coarser and contains a trace of clay grains below 200 ft.....	195.0	205.0
<b>Cretaceous System - Upper Cretaceous Series - Colorado Group:</b>		
<b>Niobrara Formation:</b>		
Shale, light brownish yellow, chalky; light yellowish gray from 212 to 213 ft.....	205.0	220.5
Shale, light to medium gray, chalky; contains a trace of aragonite from 220.5 to 225 ft.....	220.5	240.0

**Test Hole #33-A-55**  
**(19-4-6bbba)**  
**Platte County**

Location: NE NW NW NW sec. 6, T. 19 N., R. 4 W., approximately 10 feet north and 594 feet east of northwest corner.

Ground elevation: 1,837.0 ft. (t). (Newman Grove 7.5 min. quadrangle)

Depth to water: 171.4 ft. (9-2-55).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Silt, moderately clayey, non-to slightly calcareous, medium yellowish gray; contains a trace of limy nodules.....	0.0	2.0
Silt, slightly clayey, slightly calcareous, medium yellowish gray; contains limy nodules from 2 to 10 ft; contains a trace of snail shells from 10 to 25 ft; mottled brown from 10 to 20 ft; light yellowish gray from 20 to 25 ft; medium to light brownish gray and noncalcareous below 25 ft.....	2.0	27.0
Silt, slightly clayey, dark brownish gray.....	27.0	31.5
Silt, moderately to very clayey, medium brown; contains a trace of very fine to fine sand below 35 ft; contains a thin dark brownish gray layer below 38.5 ft.....	31.5	38.8
Silt, moderately clayey, slightly sandy, light brown; contains very fine to fine sand; moderately sandy from 40 to 42.5 ft; very sandy, slightly darker below 42.5 ft; contains less clay below 45 ft.....	38.8	46.5
Sand, very silty, slightly clayey, light brown; contains very fine to fine sand; contains medium sand below 49.7 ft.....	46.5	53.5
Silt, slightly clayey, light brown; contains a trace of very fine to fine sand below 55 ft; moderately clayey from 57.5 to 62 ft.....	53.5	68.0
Silt, moderately clayey; contains a trace of very fine sand; very clayey; contains a trace of very fine to medium sand and slightly darker below 73 ft.....	68.0	75.5
Silt, very clayey, light brown; moderately sandy from 75.5 to 78.5 ft; contains a trace of very fine to fine sand below 78.5 ft.....	75.5	81.5
Silt, moderately clayey, slightly sandy; contains very fine to fine sand; less sand below 85 ft.....	81.5	88.0
Silt, slightly to moderately clayey, light brown; contains a trace of very fine to medium sand from 90 to 100 ft.....	88.0	105.0



Silt, slightly clayey, light brown; moderately clayey from 107 to 109 ft. and from 120 to 121 ft; contains a trace of very fine to fine sand from 105 to 115 ft., slightly sandy from 115 to 129 ft.	105.0	121.0
Silt, very clayey, medium brown; contains a trace of very fine to fine sand.....	121.0	125.0
Clay, very silty, light brownish gray to medium brown; contains a trace of very fine to fine sand; slightly sandy from 132 to 135 ft; light brownish gray below 132 ft.....	125.0	140.0
Silt, very clayey, light brown; contains a trace of very fine to fine sand; slightly clayey from 145 to 153.5 ft., moderately clayey below 153.5 ft; slightly sandy from 153.5 to 155 ft; very sandy below 155 ft.....	140.0	156.0
Sand, very silty, slightly clayey, light brown; texture grades from very fine to medium sand; very silty from 159 to 160 ft; moderately silty with a trace of coarse to very coarse sand below 160 ft..	156.0	166.0
Silt, slightly clayey, very sandy, light brown; contains very fine to medium sand.....	166.0	169.5
Sand, very silty, slightly clayey, light brown; contains very fine to medium with a trace of coarse sand.....	169.5	174.0
Sand with some gravel, light brown; texture grades from medium to fine gravel (about 5 percent gravel) with more very coarse sand below 180 ft...	174.0	186.0
Sand and gravel; texture grades from coarse sand to fine gravel with some medium gravel (about 30 percent gravel); (about 50 percent gravel from 200 to 205 ft.); contains more medium gravel from 205 to 210 ft. (about 60 percent gravel); slightly finer below 210 ft. (about 40 percent gravel).....	186.0	220.0
Silt, slightly clayey, moderately sandy, light brown; contains fine sand.....	220.0	222.3
Sand and some gravel; texture grades from coarse sand to fine gravel with a trace of medium gravel, well sorted (about 15 percent gravel).....	222.3	238.0
Silt, moderately clayey, moderately sandy, light brownish gray; contains fine to coarse sand.....	238.0	241.0
Sand and some gravel; texture grades from coarse sand to fine gravel with a trace of medium gravel (about 15 percent gravel).....	241.0	245.0
<b>Tertiary System - Miocene Series - Ogallala Group:</b>		
Silt, moderately clayey, slightly to moderately sandy, light brownish gray; contains very fine to fine sand; contains very fine to medium sand from 250 to 255 ft; contains a trace of very fine to fine sand from 255 to 260 ft; slightly clayey below 260 ft.....	245.0	262.2

Silt, moderately clayey, slightly sandy, slightly calcareous, medium brownish gray with some olive gray; contains very fine to medium sand.....	262.2	265.0
Silt, moderately to in part very clayey, slightly calcareous, light gray; contains a trace of very fine sand; contains thin dark gray area at about 267 ft.....	265.0	270.0
Silt, slightly to moderately clayey, very sandy, medium gray; contains very fine to fine sand.....	270.0	277.0
Silt, moderately clayey, very sandy, dark gray to black; contains very fine sand; medium gray below 280 ft.....	277.0	281.5
Sand, very silty, slightly clayey, medium gray; very fine grained.....	281.5	285.0
Sand, slightly silty; texture grades from very fine to fine with some medium and a trace of coarse sand.....	285.0	289.5
Silt, slightly clayey, moderately to very sandy, medium gray; contains very fine sand.....	289.5	290.0
Silt, moderately clayey, dark gray to black; light gray; contains very fine and below 291 ft.....	290.0	292.0
Silt, moderately to very clayey, medium gray; slightly sandy, contains very fine sand below 295 ft.....	292.0	297.0
Silt, very clayey, medium gray; contains a trace of very fine sand; contains brown tint below 300 ft; lighter and contains slightly more sand below 301 ft.....	297.0	304.0
Sand; texture grades from medium to very coarse sand; probably very fine below 305 ft.....	304.0	306.5
Silt, slightly clayey, slightly sandy, light brownish gray; moderately to very clayey from 310 to 315 ft; moderately clayey, very sandy below 315 ft; contains very fine to fine sand; slightly calcareous below 310 ft; contains reworked chalky shale from 312.4 to 312.6 ft. and from 315 to 316.5 ft.....	306.5	320.5
<b>Cretaceous System - Upper Cretaceous Series - Colorado Group:</b>		
<b>Niobrara Formation:</b>		
Shale, medium brownish gray with some white, chalky.	320.5	321.5
Shale, medium gray, chalky.....	321.5	350.0

**Test Hole #32-A-55**  
**(19-4-19bbba)**  
**Platte County**

Location: NE NW NW NW sec. 19, T. 19 N., R. 4 W., approximately 9 feet south and 378 feet east of the northwest corner.

Ground elevation: 1,820.0 ft. (t). (St. Edward 7.5 min. quadrangle)

Depth to water: 166.6 ft. (8-16-55).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Road fill and soil, dark brownish gray.....	0.0	1.5
Silt, moderately clayey, medium yellowish gray; slightly to moderately clayey below 2 ft.....	1.5	4.0
Silt, slightly clayey, medium yellowish gray; light yellowish gray below 5 ft; slightly calcareous; contains a trace of snail shells from 10 to 30 ft; slightly more clayey and slightly darker below 38 ft.....	4.0	39.5
Silt, moderately clayey, dark brownish gray; con- tains a trace of very fine sand; very clayey, light brown below 41 ft.....	39.5	41.5
Silt, slightly sandy, medium brown; contains very fine to fine sand.....	41.5	50.0
Silt, moderately clayey, medium brown; trace of very fine sand.....	50.0	59.0
Silt, very clayey, slightly sandy, light brown; con- tains very fine to fine sand.....	59.0	60.0
Silt, very clayey, light brown; contains a trace of very fine sand from 64.5 to 65 ft.....	60.0	70.0
Silt, moderately clayey, light brown; contains a trace of sand from 75 to 78 ft; slightly to in part moderately sandy below 78 ft; contains very fine to fine sand.....	70.0	80.0
Silt, very clayey, light brown; contains a trace of very fine sand from 80 to 85 ft; slightly sandy; contains very fine to fine sand below 85 ft.....	80.0	90.2
Silt, moderately clayey, moderately to very sandy, light brown; contains very fine to fine sand.....	90.2	95.6
Silt, moderately clayey, light brown; contains a trace of sand from 95.6 to 98 ft; slightly sandy, contains very fine to fine sand below 98 ft.....	95.6	103.0
Silt, slightly clayey, light brown; contains a trace of very fine sand.....	103.0	108.5
Silt, moderately to very clayey, light brown; con- tains a trace of very fine sand from 108.5 to 113 ft; very clayey, slightly sandy; contains very fine to fine sand below 113 ft.....	108.5	117.5

Silt, slightly clayey, light brown; coarse textured; contains a trace of sand from 117.5 to 120 ft; contains a trace of very fine to medium sand below 120 ft.....	117.5	121.5
Silt, moderately clayey, light brown; coarse textured; slightly clayey below 127 ft; contains a trace of coarse silt to very fine sand from 130 to 131 ft; slightly calcareous below 130 ft.....	121.5	138.0
Silt, slightly clayey, very calcareous, light brown; contains white limy areas.....	138.0	138.5
Silt, slightly clayey, slightly calcareous, light brown.....	138.5	142.5
Silt, slightly clayey, very sandy, light brown; contains very fine sand from 142.5 to 145 ft; contains very fine to medium sand below 145 ft.....	142.5	152.0
Silt, slightly to moderately clayey, moderately sandy, light brown; contains very fine to fine sand; light brownish gray, very sandy below 154 ft.....	152.0	158.5
Silt, slightly clayey, slightly sandy, light olive gray; coarse silt to very fine sand; light brown below 163.8 ft.....	158.5	164.5
Sand, brownish gray; texture grades from very fine to fine with some medium sand.....	164.5	165.0
Sand and gravel; texture grades from coarse sand to fine gravel with a trace of medium gravel (about 30 to 40 percent gravel); iron stained from 165 to 170 ft; contains a thin silt layer from 172.6 to 172.8 ft.....	165.0	180.0
Sand and some gravel; texture grades from coarse sand to fine gravel (about 10 percent gravel).....	180.0	185.0
Sand and gravel; texture grades from coarse sand to fine gravel with a trace of medium gravel (about 25 percent gravel); slightly coarser from 190 to 195 ft; (about 30 to 40 percent gravel); texture grades from very coarse sand to fine gravel with a trace of medium gravel below 195 ft. (about 50 percent gravel).....	185.0	200.0
Gravel; texture grades from fine to medium with some coarse gravel.....	200.0	205.0
Sand; texture grades from medium to very coarse with some fine gravel.....	205.0	210.0
Sand; texture grades from fine to very coarse with some fine gravel; contains silt, moderately clayey, light brownish gray from 212 to 213.4 ft..	210.0	220.0
Sand and some gravel; texture grades from very coarse sand to fine gravel with a trace of medium gravel (about 5 to 10 percent gravel).....	220.0	231.0
Silt, slightly clayey, very sandy, medium brown; contains very fine to fine sand.....	231.0	236.0
Sand; texture grades from coarse to very coarse sand with some fine gravel.....	236.0	240.0

Sand and gravel; texture grades from very coarse sand to fine gravel (about 20 percent gravel); slightly finer from 255 to 260 ft. (about 10 to 20 percent fine gravel); coarser grained with some medium gravel from 260 to 265 ft. (about 30 percent gravel); slightly finer from 265 to 274.7 ft. (about 10 percent gravel).....	240.0	274.7
Silt, slightly to moderately clayey, slightly to moderately sandy, light brown; contains very fine to fine sand.....	274.7	280.5
<b>Tertiary System - Miocene Series - Ogallala Group:</b>		
Silt, moderately clayey, very sandy, light olive gray; contains fine to coarse sand.....	280.5	285.0
Silt, slightly clayey, very sandy, light brownish gray; contains very fine sand.....	285.0	286.5
Sand, white, very fine grained.....	286.5	287.0
Silt, slightly to moderately clayey, light olive gray; coarse texture with a trace of very fine sand.....	287.0	290.1
Silt, slightly to moderately clayey, slightly to moderately sandy, dark gray to black; contains very fine to fine sand.....	290.1	295.0
Clay, silty, dark grayish black; contains many shell fragments; light gray with a blue tint, moderately calcareous below 297 ft.....	295.0	300.0
Silt, very clayey, slightly calcareous, light bluish gray; contains many snail fragments.....	300.0	305.0
Clay, very silty, slightly sandy, moderately calcareous, dark bluish gray; contains shell fragments; noncalcareous below 310 ft; black below 313 ft....	305.0	315.0
Silt, very clayey, moderately calcareous, dark gray; contains many shell fragments and a trace of fine sand.....	315.0	318.0
Silt, moderately to very clayey, moderately calcareous, very sandy, medium dark gray; contains very fine to fine sand.....	318.0	320.0
Sand, very silty, slightly clayey, light gray with a blue tint; very fine grained; slightly calcareous below 325 ft; contains white limy area at 327 ft..	320.0	327.0
<b>Cretaceous System - Upper Cretaceous Series - Colorado Group:</b>		
<b>Niobrara Formation:</b>		
Shale, medium gray, chalky.....	327.0	334.0
Shale, light gray, chalky; very light gray to white below 336 ft.....	334.0	340.0

**Test Hole #30-A-55**  
**(19-4-31cccd)**  
**Platte County**

Location: SE SW SW SW sec. 31, T. 19 N., R. 4 W., approximately 9 feet north and 521 feet east of southwest corner.

Ground elevation: 1,765.0 ft. (t). (St. Edward 7.5 min. quadrangle)

Depth to water: Unknown.

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Road fill and soil, dark brownish gray.....	0.0	1.5
Soil, silt, very clayey, dark brownish gray.....	1.5	2.5
Silt, moderately to very clayey, medium yellowish gray; slightly clayey, light yellowish gray below 4.5 ft; slightly calcareous from 5 to 45 ft; contains a trace of snail shells and small iron concretion below 15 ft.....	2.5	47.0
Silt, slightly to moderately clayey, medium brown; moderately to very clayey from 48 to 50 ft; contains a trace of very fine to fine sand below 54.5 ft; light brown below 55.5 ft; slightly sandy from 60 to 65 ft; slightly calcareous from 75 to 80 ft; limy area at 77 ft.....	47.0	84.0
Silt, slightly clayey, moderately to very sandy, light brown; contains very fine to medium sand; slightly to moderately sandy below 96.4 ft.....	84.0	97.0
Silt, moderately to very clayey, trace of very fine sand, light olive gray.....	97.0	101.3
Silt, slightly clayey, very sandy, light brown; contains very fine to medium sand.....	101.3	104.0
Sand, very silty, light brown; texture grades from very fine to medium.....	104.0	105.0
Sand, brownish gray; texture grades from very fine to medium with some coarse sand.....	105.0	113.5
Silt, moderately clayey, moderately to very sandy, light brownish gray; contains very fine sand.....	113.5	115.5
No sample obtained; probably fine sand.....	115.5	117.0

**Test Hole #31-A-55**  
**(19-4-31ccbb)**  
**Platte County**

Location: NW NW SW SW sec. 31, T. 19 N., R. 4 W., approximately 1,042 feet north and 7 feet east of southwest corner.

Ground elevation: 1,772.0 ft. (t). (St. Edward 7.5 min. quadrangle)

Depth to water: 129.4 ft. (8-26-55).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Road fill and soil, dark brownish gray.....	0.0	1.5
Silt, moderately clayey, medium brownish gray.....	1.5	2.0
Silt, moderately to very clayey, medium yellowish gray; slightly clayey from 4 to 44 ft; coarse texture; slightly calcareous from 4 to 30 ft; light yellowish gray below 40 ft.....	2.0	44.8
Silt, moderately to very clayey, medium to dark brownish gray; trace of very fine sand from 45.2 to 46 ft; very fine to medium sand below 46 ft....	44.8	47.0
Silt, very clayey, medium brown; trace of sand from 47 to 50 ft., slightly sandy below 50 ft; contains very fine to medium sand; slightly to moderately clayey below 51 ft.....	47.0	55.0
Silt, slightly to moderately clayey, light brown; contains a trace of very fine to fine sand; slightly to in part moderately sandy from 60 to 65 ft., moderately calcareous; contains many white limy areas from 66.5 to 70 ft.....	55.0	72.7
Silt, moderately to very clayey, very calcareous, white to light brown, slightly calcareous; contains small white limy areas below 73.1 ft.....	72.7	75.0
Silt, slightly to moderately clayey, light brown....	75.0	80.0
Silt, slightly clayey, light brown; contains a trace of very fine sand; contains a trace of very fine to coarse sand below 85 ft.....	80.0	94.0
Silt, moderately clayey, moderately to very sandy, medium brownish gray to brown; contains very fine to fine sand; contains very fine to medium sand below 95 ft.....	94.0	97.5
Sand, very silty, slightly clayey, light brown; texture grades from very fine to medium with a trace of coarse.....	97.5	104.5
Silt, slightly to moderately clayey, very sandy, light brown to light brownish gray; contains very fine to medium sand.....	104.5	107.2
Sand, very silty, slightly clayey, light brownish gray; texture grades from very fine to medium sand	107.2	115.0

Sand, brownish gray; texture grades from fine to medium with some coarse sand; slightly finer below 120 ft.....	115.0	123.0
Sand, very silty, slightly clayey, light brownish gray; texture grades from very fine to fine sand..	123.0	124.5
Silt, moderately clayey, moderately sandy, light brownish gray.....	124.5	125.0
Sand and gravel, reddish brown; texture grades from medium sand to fine gravel with some medium gravel (about 15 percent gravel).....	125.0	130.0
Sand and gravel, reddish brown; texture grades from coarse sand to medium gravel (about 60 percent gravel); slightly coarser below 145 ft.....	130.0	150.0
Gravel, reddish brown; texture grades from coarse sand to medium gravel (about 10 to 15 percent sand); slightly finer below 170 ft. (about 50 percent sand).....	150.0	179.5
Silt, moderately clayey, very sandy, light brownish gray; contains very fine to fine sand.....	179.5	183.5
Sand, brownish gray; texture grades from medium to very coarse with fine gravel (about 5 percent gravel); slightly coarser from 190 to 195 ft. (about 10 percent gravel); trace of fine gravel below 195 ft.....	183.5	197.5
<b>Tertiary System - Miocene Series - Ogallala Group:</b>		
Silt, slightly clayey, very sandy, light olive gray; contains very fine to fine sand.....	197.5	203.5
Silt, moderately to very clayey, very sandy, light olive gray; contains very fine to fine sand; moderately sandy; contains very fine to fine sand below 205 ft.....	203.5	210.0
Silt, moderately to very clayey, moderately calcareous, moderately sandy, light olive gray; contains very fine to fine sand; contains white limy areas from 210 to 214 ft; slightly calcareous below 214 ft; slightly clayey below 215 ft.....	210.0	216.5
Silt, slightly clayey, slightly sandy, moderately calcareous, light olive gray; contains many white hard limy areas from 216.5 to 218 ft. and from 222 to 224.5 ft; coarse texture; trace of very fine sand, slightly calcareous from 218 to 222 ft.....	216.5	224.5
Clay, very calcareous, reworked chalky shale; light yellowish gray to white.....	224.5	230.0
<b>Cretaceous System - Upper Cretaceous Series - Colorado Group:</b>		
<b>Niobrara Formation:</b>		
Shale, light brownish yellow, chalky.....	230.0	259.0
Shale, medium olive gray, chalky; light brownish gray from 262.5 to 267.5 ft; medium gray below 267.5 ft.....	259.0	270.0



**Test Hole #6-A-55**  
**(A20-1-6bbbb)**  
**Platte County**

Location: NW NW NW NW sec. 6, T. 20 N., R. 1 E., approximately 309 feet south and 9 feet east of northwest corner.

Ground elevation: 1,582.0 ft. (t). (Creston 7.5 min. quadrangle)

Depth to water: 8.7 ft. (6-27-55).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Road fill and soil, dark brownish gray.....	0.0	1.5
Soil, clay, very silty, dark gray.....	1.5	3.5
Clay, very silty, medium yellowish gray; contains some limy areas.....	3.5	5.5
Silt, moderately to in part very clayey, slightly calcareous, medium yellowish gray.....	5.5	9.4
Silt, slightly clayey, medium yellowish gray; medium to dark brownish gray, coarse textured, contains some limy nodules below 13.5 ft.....	9.4	16.7
Silt, very clayey, dark gray.....	16.7	20.0
Silt, slightly clayey, medium greenish gray; coarse textured below 22.5 ft.....	20.0	28.0
Silt, slightly to moderately clayey, dark gray; very clayey from 33 to 38 ft; a trace of shell frag- ments at 37 ft; slightly calcareous below 38 ft...	28.0	39.0
Silt, slightly clayey, medium greenish gray; coarse textured; contains wood fragments and shells below 41.2 ft.....	39.0	42.0
Sand, slightly silty; texture grades from very fine to medium sand; contains many snail shells; con- tains limy nodules below 45 ft.....	42.0	48.5
Silt, slightly clayey, slightly calcareous, medium gray.....	48.5	49.5
Sand; texture grades from fine to very coarse sand with a trace of fine gravel.....	49.5	55.0
Sand and some gravel; texture grades from fine sand to fine gravel (about 5 percent gravel).....	55.0	60.0
Sand; texture grades from fine to very coarse.....	60.0	62.0
Till, clay, very silty, slightly sandy to gravelly, moderately calcareous, medium gray; olive tint from 98.9 to 101 ft.....	62.0	120.0
<b>Cretaceous System - Upper Cretaceous Series - Colorado Group:</b>		
<b>Niobrara Formation:</b>		
Shale, medium gray, clayey, very calcareous; light gray below 135 ft.....	120.0	140.0

**Test Hole #5-A-55**  
**(20-1-24aabb)**  
**Platte County**

Location: NW corner NE NE sec. 24, T. 20 N., R. 1 W., approximately 10 feet south and 1,251 feet west of northeast corner.

Ground elevation: 1,634.0 ft. (t). (Creston 7.5 min. quadrangle)

Depth to water: 35.0 ft. (6-27-55).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Road fill and soil, medium brownish gray.....	0.0	1.5
Silt, slightly clayey, slightly calcareous, medium to light yellowish gray; contains some limy nodules from 1.5 to 5 ft.....	1.5	21.0
Silt, slightly to moderately clayey, dark brownish gray.....	21.0	24.0
Clay, very silty, medium brown; a trace to slightly sandy from 24 to 27.5 ft; contains very fine to fine sand; slightly sandy below 27.5 ft., moderately sandy from 38 to 41.9 ft; contains very fine to medium sand; medium yellowish gray from 27.5 to 30 ft; light olive gray below 30 ft; slightly calcareous below 40 ft.....	24.0	46.4
Sand, very silty, slightly calcareous, medium brown; texture grades from very fine to fine with some medium sand.....	46.4	49.1
Silt, very clayey, slightly calcareous, in part slightly sandy, light medium olive gray; moderately to very sandy below 50 ft.....	49.1	54.0
Sand; texture grades from very fine to medium with some coarse and a trace of very coarse sand.....	54.0	55.0
Sand; texture grades from very fine to very coarse with a trace of fine gravel; slightly coarser below 65 ft.....	55.0	75.0
Silt, slightly clayey, slightly sandy, medium olive gray to gray.....	75.0	77.5
Sand; texture grades from very fine to fine with some medium and a trace of coarse sand.....	77.5	85.0
Sand; texture grades from very fine to very coarse with a trace of fine gravel; contains clay and dark green grains.....	85.0	88.5
Silt, slightly clayey, slightly sandy, medium olive gray.....	88.5	90.0

Sand and some gravel; texture grades from medium sand to fine gravel with some medium gravel (about 10 to 15 percent gravel); contains many clay grains from 90 to 95 ft; contains a thin silt layer at 103 ft; contains dark silicates, many dark silicates below 100 ft; (about 25 percent gravel from 110 to 115 ft.); contains some coarse gravel to small boulders below 115 ft. (about 30 to 40 percent gravel).....	90.0	120.0
Sand; texture grades from fine to very coarse with some fine gravel and a trace of medium gravel.....	120.0	125.0
Sand and some gravel; texture grades from medium sand to fine gravel (about 5 percent gravel).....	125.0	127.9
Till, clay, very silty, slightly sandy to gravelly, moderately calcareous, dark gray.....	127.9	184.8
Till, silt, very clayey, slightly sandy to gravelly, moderately calcareous, dark gray.....	184.8	186.0
<b>Cretaceous System - Upper Cretaceous Series - Colorado Group:</b>		
<b>Niobrara Formation:</b>		
Shale, light gray, chalky.....	186.0	200.0

## Test Hole #20-A-55

(20-3-1dddc)

## Platte County

Location: SW SE SE SE sec. 1, T. 20 N., R. 3 W., approximately 21 feet north and 442 feet west of southeast corner.

Ground elevation: 1,722.0 ft. (t). (Cornlea 7.5 min. quadrangle)

Depth to water: 76.9 ft. (7-29-55).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Soil, silt, moderately clayey, dark brownish gray...	0.0	2.0
Silt, very clayey, medium brownish gray.....	2.0	3.5
Silt, moderately clayey, medium yellowish gray.....	3.5	4.5
Silt, slightly clayey, light yellowish gray; contains limy nodules from 4.5 to 10 ft; slightly calcareous from 10 to 38 ft; medium yellowish gray from 15 to 38 ft; mottled brown and brownish gray from 30 to 38 ft; medium brownish gray below 38 ft; contains a trace of snail shells below 15 ft..	4.5	40.5
Silt, moderately clayey, dark brownish gray.....	40.5	42.0
Clay, very silty, medium brownish gray; medium brown below 47.5 ft; contains a trace of very fine to medium sand below 50 ft.....	42.0	52.0
Silt, very clayey, slightly sandy, medium brown; contains very fine to medium sand.....	52.0	53.5
Silt, moderately to very clayey, dark brownish gray to black.....	53.5	80.0
Clay, very silty, slightly to moderately calcareous, light olive gray; a trace of sand from 85 to 90 ft; moderately to very sandy below 91 ft; contains very fine to medium sand.....	80.0	93.5
Silt, very clayey, light olive gray.....	93.5	94.0
Clay, very silty, light olive gray.....	94.0	96.0
Silt, very clayey, dark brownish gray; contains snail shells.....	96.0	96.7
Clay, very silty, moderately to slightly calcareous, medium bluish gray; light olive gray below 97.5 ft.....	96.7	100.0
Sand and some gravel; texture grades from medium sand to fine gravel with a trace of medium gravel (about 5 to 10 percent gravel).....	100.0	110.0
Sand; texture grades from fine to coarse with some very coarse; slightly finer below 120 ft; contains a thin silt layer at 123.1 ft.....	110.0	127.5
Silt, very clayey, slightly sandy, light olive gray; contains very fine to fine sand; trace of very fine sand from 130 to 133.3 ft; coarse texture from 130 to 134 ft; medium brownish gray below 133.3 ft.....	127.5	134.0

Clay, very silty, slightly calcareous, light olive gray; very sandy; contains many limy nodules below 135.5 ft; contains very fine to fine sand.....	134.0	138.0
Sand, very silty, slightly clayey, light gray; texture grades from very fine to fine sand.....	138.0	140.0
Silt, very clayey, moderately to slightly sandy, slightly to moderately calcareous, light gray; contains limy areas below 141.5 ft.....	140.0	143.5
Silt, slightly clayey, trace of very fine sand, light olive gray; coarse textured.....	143.5	144.0
Sand, slightly calcareous, brownish gray; texture grades from very fine to medium with a trace of coarse; contains clay grains.....	144.0	146.0
Silt, moderately clayey with a trace of very fine sand, light olive gray; coarse textured; light brownish gray from 147 to 148 ft; very sandy, medium gray below 148 ft.....	146.0	150.0
Clay, very silty, moderately to slightly calcareous, medium gray; dark brownish gray, trace of very fine to fine sand below 151.5 ft.....	150.0	155.0
Silt, very clayey, slightly sandy, moderately calcareous, medium brownish gray; contains very fine to medium sand.....	155.0	156.0
Clay, very silty, slightly to moderately sandy, in part very sandy, slightly calcareous, light brownish gray, in part light yellowish gray; contains very fine to medium sand.....	156.0	180.0
Silt, slightly sandy, light brown.....	180.0	184.0
Clay, slightly sandy, dark brownish gray; light brownish gray below 185.5 ft; slightly to moderately sandy, very calcareous; contains limy nodules below 188 ft.....	184.0	190.8
Silt, slightly to moderately sandy, slightly calcareous, light yellowish gray; noncalcareous below 192.5 ft.....	190.8	195.0
Sand; texture grades from very fine to medium with some coarse.....	195.0	200.0
Sand; texture grades from very fine to very coarse with some fine gravel and a trace of medium gravel	200.0	205.0
Sand and some gravel, slightly silty, slightly calcareous; texture grades from very fine sand to fine gravel (about 10 percent gravel); slightly finer, not silty, noncalcareous below 210 ft. (about 5 percent gravel).....	205.0	218.3
<b>Cretaceous System - Upper Cretaceous Series - Colorado Group:</b>		
<b>Niobrara Formation:</b>		
Shale, light brownish gray; chalky; medium gray from 218.7 to 230 ft; light gray below 230 ft; contains a trace of aragonite from 230 to 240 ft.....	218.3	250.0

**Test Hole #21-A-55**  
**(20-3-24dddd)**  
**Platte County**

Location: SE SE SE SE sec. 24, T. 20 N., R. 3 W., approximately 216 feet north and 9 feet west of southeast corner.

Ground elevation: 1,739.0 ft. (t). (Cornlea 7.5 min. quadrangle)

Depth to water: 81.2 ft. (8-3-55).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Road fill and soil, dark brownish gray.....	0.0	0.5
Soil, silt, very clayey, dark brownish gray.....	0.5	2.5
Clay, very silty, dark brownish gray.....	2.5	5.5
Silt, moderately to very clayey, medium yellowish gray.....	5.5	13.5
Silt, slightly clayey, medium yellowish gray; mottled brown to yellowish brown; medium to light brownish gray below 33.5 ft; slightly to moderately clayey from 20 to 25 ft; contains iron concretions from 30 to 33.5 ft.....	13.5	36.5
Silt, slightly clayey, very peaty, dark brown.....	36.5	38.6
Silt, moderately clayey, slightly peaty, dark brownish gray.....	38.6	40.0
Silt, slightly to moderately clayey, medium gray....	40.0	42.5
Clay, very silty with a trace of sand, medium gray; slightly sandy below 45 ft; contains very fine to medium sand.....	42.5	47.0
Silt, very clayey, medium brownish gray; contains a trace of very fine to medium sand.....	47.0	52.0
Clay, very silty, medium gray.....	52.0	55.0
Silt, very clayey, slightly sandy, medium gray; contains very fine to medium sand.....	55.0	60.0
Silt, very clayey, medium gray; coarse textured, slightly to moderately clayey below 65 ft.....	60.0	66.5
Clay, very silty, slightly sandy, medium gray; contains very fine to medium sand; light gray below 69 ft.....	66.5	79.0
Silt, slightly sandy, slightly peaty, medium brown..	79.0	79.3
Clay, very silty, slightly sandy, light olive gray; contains very fine to medium sand; mottled light yellowish brown below 85 ft; moderately to very sandy below 91 ft.....	79.3	93.0
Sand; texture grades from fine to coarse with some very coarse sand; slightly coarser below 95 ft; contains more very coarse sand and a trace of gravel.....	93.0	104.0
Silt, very clayey, slightly calcareous, light olive gray, mottled brown; contains a trace of very fine to fine sand; contains limy nodules.....	104.0	105.0

Silt, slightly clayey, slightly calcareous, light olive gray; contains a trace of very fine to fine sand; contains many limy nodules below 106.5 ft; noncalcareous below 108.5 ft.....	105.0	110.0
Silt, slightly clayey, light gray to medium brownish gray; coarse textured; contains a trace of very fine to fine sand; slightly sandy, contains very fine to medium sand from 112 to 115 ft; light olive gray below 112 ft; slightly calcareous; contains limy nodules below 114 ft.....	110.0	115.0
Silt, slightly clayey, light olive gray; coarse textured; contains volcanic ash.....	115.0	118.5
Silt, slightly clayey, medium brownish gray; light olive gray below 119.5 ft; moderately clayey from 119.5 to 122 ft. from 123.5 to 124.5 ft. and below 130 ft; very clayey from 124.5 to 130 ft; trace of very fine to medium sand from 122 to 123.5 ft., slightly sandy below 123.5 ft; noncalcareous, light brownish gray below 132 ft.....	118.5	134.7
Clay, very silty, slightly calcareous, light brownish gray; contains a trace to slightly sandy, very fine to medium sand; contains pelecypod shell fragments from 134.7 to 136.5 ft; mottled yellowish brown at 147.8 ft; noncalcareous below 145 ft.	134.7	147.8
Sand, brownish gray; texture grades from fine to very coarse with a trace of fine gravel; contains reworked siltstone.....	147.8	150.0
Sand, brownish gray; texture grades from fine to medium with a trace of coarse; slightly finer grained from 165 to 170 ft; contains a trace of shell fragments from 150 to 160 ft; contains a silt layer at 162.5 and 163.5 ft.....	150.0	172.7
Silt, slightly to very clayey, moderately sandy, light olive gray; contains very fine to medium sand.....	172.7	179.5
Sand, brownish gray; texture grades from fine to medium with some coarse.....	179.5	186.0
Silt, slightly to very clayey, slightly sandy, light olive gray to medium brownish gray; contains very fine to medium sand.....	186.0	189.5
Clay, very silty, slightly sandy, light olive gray; contains very fine to medium sand.....	189.5	194.0
Clay, very silty, light bluish gray; light olive gray below 196 ft; contains a trace of very fine to fine sand below 197.5 ft.....	194.0	200.0
Silt, very to slightly clayey, slightly to very sandy, light olive gray; contains very fine to medium sand.....	200.0	203.0
Sand, brownish gray; texture grades from fine to coarse with some very fine and a trace of fine gravel.....	203.0	205.0

Sand and some gravel; texture grades from medium to very coarse with fine gravel (about 5 percent gravel).....	205.0	210.0
Sand, brownish gray; texture grades from medium to coarse with a trace of very coarse sand and fine gravel; slightly finer below 220 ft.....	210.0	230.0
Sand and gravel, slightly calcareous, texture grades from medium sand to fine gravel with a trace of medium gravel (about 10 to 15 percent gravel).....	230.0	232.7
<b>Cretaceous System - Upper Cretaceous Series - Colorado Group:</b>		
<b>Niobrara Formation:</b>		
Shale, very light olive gray to light gray, chalky..	232.7	239.0
Shale, light gray, chalky, very calcareous.....	239.0	270.0



**Test Hole #35-A-55**  
**(20-4-6bbba)**  
**Platte County**

Location: NE NW NW NW sec. 6, T. 20 N., R. 4 W., approximately 8 feet south and 415 feet east of northwest corner.

Ground elevation: 1,861.0 ft. (t). (Newman Grove 7.5 min. quadrangle)

Depth to water: Unknown, test hole caved at 166.8 ft.

Depth, in feet  
From                  To

**Quaternary System, undifferentiated:**

Road fill and soil, dark brownish gray.....	0.0	2.0
Silt, slightly clayey, medium to light yellowish gray; contains some limy nodules from 5 to 15 ft; contains a trace of snail shells below 15 ft; slightly calcareous from 5 to 40 ft; mottled gray from 25 to 30 ft.....	2.0	43.0
Silt, moderately clayey with a trace of very fine sand, dark brownish gray; moderately to very clayey, medium brown below 47 ft; slightly sandy; contains very fine to fine sand below 50.5 ft.....	43.0	54.5
Clay, very silty, medium brown; contains a trace of very fine sand, light brown below 55 ft.....	54.5	62.5
Silt, very to moderately clayey, slightly to moderately sandy, in part very sandy, light brown; contains very fine to medium sand from 75 to 80 ft. and from 100 to 102 ft., medium brown from 93.3 to 95 ft.....	62.5	105.0
Silt, slightly to moderately clayey, light brown; contains a trace of very fine to fine sand.....	105.0	115.0
Silt, slightly clayey, slightly sandy, light brown; contains very fine to fine sand; moderately to very sandy from 118 to 120 ft; slightly to moderately sandy from 120 to 121 ft.....	115.0	125.0
Silt, slightly clayey, light brown; trace to slightly sandy; contains very fine to fine sand; moderately clayey from 142.5 to 144 ft., very clayey below 144 ft.....	125.0	146.8
Clay, very silty, light brownish gray; contains a trace of very fine to fine sand below 155 ft.....	146.8	160.0
Silt, very to moderately clayey, slightly to very sandy, light brownish gray; contains very fine to medium sand.....	160.0	165.0
Sand, light brownish gray; texture grades from very fine to fine with some very coarse silt.....	165.0	166.5
Silt, slightly clayey, moderately to very sandy, light brownish gray; contains very fine to fine sand.....	166.5	170.5
Silt, slightly clayey, light brown; coarse textured silt with a trace of very fine sand.....	170.5	177.5

Silt, slightly clayey, light yellowish gray.....	177.5	183.5
Silt, moderately clayey, slightly sandy, light brownish gray; contains very fine to medium sand; very sandy with some coarse sand below 185.5 ft...	183.5	189.0
Sand and gravel; texture grades from fine sand to fine gravel with a trace of medium gravel; well sorted; contains much very coarse sand (about 15 percent gravel).....	189.0	194.7
Silt, slightly clayey, slightly sandy, medium brownish yellow.....	194.7	195.0
Sand and gravel; texture grades from coarse sand to fine gravel with some medium gravel (about 30 to 35 percent gravel); slightly finer below 200 ft., well sorted (about 10 to 15 percent gravel).....	195.0	215.0
<b>Tertiary System - Miocene Series - Ogallala Group:</b>		
Silt, very clayey, trace to very sandy, light brown; white, slightly calcareous from 217.5 to 219 ft; light olive gray below 219 ft; contains very fine to fine sand.....	215.0	220.8
Sand and some gravel; texture grades from medium sand to fine gravel with some medium gravel (about 5 percent gravel).....	220.8	223.0
Silt, moderately clayey, very sandy, light olive gray; contains very fine to fine sand with interbedded siltstone below 225 ft.....	223.0	230.0
Silt, slightly clayey, very sandy, light olive gray; contains very fine sand.....	230.0	248.0
Silt to siltstone, moderately sandy, light olive gray; contains very fine sand.....	248.0	250.0
Silt, slightly clayey, slightly sandy; coarse textured silt to very fine sand, light olive gray....	250.0	260.0
Silt and siltstone, interbedded, slightly clayey, slightly sandy, light olive gray; coarse textured to very fine sand; contains rootlets.....	260.0	265.0
Silt, slightly clayey, slightly sandy, light olive gray; coarse textured silt to very fine sand.....	265.0	267.8
Silt, moderately clayey, light olive gray; contains a trace of very fine sand; contains many white nodular consolidated limy areas from 270 to 290 ft; slightly calcareous from 272.5 to 290 ft; slightly sandy from 280 to 287.5 ft., very sandy below 287.5 ft; contains very fine to medium sand.	267.8	297.0
Silt, slightly clayey, very sandy to silty sand; light olive gray; contains very fine to medium sand.....	297.0	300.0
Sand, brownish gray; texture grades from very fine to fine; contains thin silt from 306.9 to 307 ft..	300.0	315.0
Silt, slightly clayey, very sandy, light olive gray; contains very fine sand.....	315.0	315.5
Sand, brownish gray; texture grades from very fine to fine.....	315.5	318.0

Silt, slightly clayey, very sandy, light olive gray; contains very fine sand.....	318.0	320.0
Silt, slightly clayey, very sandy, light olive gray; contains very fine sand.....	320.0	325.0
Silt, moderately clayey, a trace to slightly sandy, light olive gray; contains very fine sand; very clayey from 326 to 330 ft; slightly to moderately clayey below 335 ft; slightly to moderately sandy from 327 to 335 ft.....	325.0	345.0
Silt, very sandy, light olive gray; coarse textured to very fine sand.....	345.0	355.0
Silt, slightly clayey, slightly sandy, light olive gray; moderately to in part very sandy below 363 ft; coarse textured to very fine sand.....	355.0	365.0
Sand, very silty, light olive gray; texture grades from coarse silt to very fine sand.....	365.0	368.5
Silt, slightly clayey, very sandy, light olive gray; coarse textured silt to very fine sand.....	368.5	370.0
Sand, very silty, brownish gray; texture grades from coarse silt to very fine sand.....	370.0	375.0
Sand, brownish gray; texture grades from very fine to fine.....	375.0	380.0
<b>Cretaceous System - Upper Cretaceous Series - Colorado Group:</b>		
<b>Niobrara Formation:</b>		
Shale, light brownish yellow with some white, chalky; contains more white areas from 380 to 390 ft.....	380.0	405.5
Shale, light brownish gray to medium olive gray, chalky.....	405.5	406.0
Shale, medium brownish gray, chalky; medium gray with some aragonite below 413.2 ft.....	406.0	420.0

**Test Hole #34-A-55**  
**(20-4-19bbbb)**  
**Platte County**

Location: NW NW NW NW sec. 19, T. 20 N., R. 4 W., approximately 9 feet south and 235 feet east of northwest corner.

Ground elevation: 1,896.0 ft. (t). (Newman Grove 7.5 min. quadrangle)

Depth to water: 217.7 ft. (9-2-55).

	<u>Depth, in feet</u>	
	From	To
<b>Quaternary System, undifferentiated:</b>		
Road fill and soil, dark brownish gray.....	0.0	2.0
Silt, slightly to very clayey, medium brownish gray to yellowish gray.....	2.0	4.5
Silt, slightly clayey, light to medium yellowish gray; contains snail shells from 5 to 40 ft; slightly calcareous from 5 to 40 ft; mottled brown below 43 ft.....	4.5	45.0
Silt, moderately clayey, dark brownish gray.....	45.0	46.5
Silt, moderately to very clayey, medium brown.....	46.5	50.0
Clay, very silty, medium brown; contains a trace of very fine sand.....	50.0	52.5
Silt, very to moderately clayey, medium to light brown.....	52.5	56.7
Silt, very clayey, medium brownish gray to brown; contains a trace of very fine to fine sand.....	56.7	62.0
Silt, moderately clayey, light brown; contains a trace of very fine to fine sand; very clayey from 72 to 76.5 ft; slightly to moderately sandy, medium brown from 75.5 to 76.5 ft., moderately to very sandy below 76.5 ft.....	62.0	82.0
Sand, very silty, slightly clayey, light brown; texture grades from very fine to fine.....	82.0	82.5
Silt, slightly clayey, moderately sandy; light brown; contains very fine sand.....	82.5	83.0
Sand, very silty, slightly clayey, medium brown; texture grades from very fine to fine; contains more silt below 85.0 ft.....	83.0	90.0
Silt, slightly clayey, moderately sandy, medium brown; contains very fine sand; trace of sand from 92 to 95 ft; slightly to moderately clayey from 112 to 116.5 ft; light brown below 116.5 ft.....	90.0	122.5
Silt, moderately to very clayey, slightly sandy, medium brown; contains very fine sand; light brown, slightly calcareous below 125 ft.....	122.5	133.0
Silt, moderately clayey, very sandy, slightly calcareous; contains very fine to medium sand.....	133.0	137.5

Silt, moderately to very clayey, slightly to moderately sandy, slightly calcareous, light brown; contains limy nodules, moderately clayey below 140 ft.....	137.5	155.0
Silt, slightly clayey, in part moderately clayey, light brown; contains a trace of very fine to fine sand from 170 to 175 ft., and below 180 ft.....	155.0	183.0
Silt, moderately clayey, moderately to slightly sandy, light brown; contains very fine to medium sand.....	183.0	190.0
Silt, slightly clayey, slightly sandy, light brown; contains very fine to medium sand.....	190.0	194.5
Silt, very clayey, moderately to in part very sandy, light gray; contains very fine to medium sand.....	194.5	200.0
Silt, moderately clayey, slightly sandy, light gray to olive gray; contains very fine sand.....	200.0	210.0
Silt, very clayey, slightly sandy, in part moderately sandy, light olive gray; contains very fine to fine sand; not sandy from 216.5 to 220 ft; moderately clayey below 220 ft; very sandy below 228 ft; contains very fine to medium with some coarse sand from 228 to 230 ft; contains fine to coarse with a trace of very coarse below 230 ft...	210.0	233.0
Sand and gravel; texture grades from coarse sand to fine gravel with a trace of medium gravel (about 10 percent gravel), from 240 to 245 ft. (about 20 to 25 percent gravel); from 245 to 250 ft. (about 30 to 35 percent gravel); from 250 to 265 ft. (about 45 to 50 percent gravel); from 265 to 270 ft. (about 50 to 60 percent gravel); below 270 ft. (about 40 percent gravel).....	233.0	284.5
Silt, slightly clayey, light olive gray.....	284.5	286.0
Sand, brownish gray; texture grades from medium to coarse with some very coarse.....	286.0	295.6
Silt, slightly clayey, light olive gray; slightly sandy, moderately calcareous, light gray to white from 297 to 300 ft; moderately to very sandy below 300 ft; contains very fine to fine sand.....	295.6	303.0
Sand; texture grades from fine to medium with a trace of coarse and very coarse; slightly coarser grained below 310 ft.....	303.0	312.3
<b>Tertiary System - Miocene Series - Ogallala Group:</b>		
Silt, slightly clayey, very calcareous, light olive gray to white; contains a trace of very fine to fine sand from 312.3 to 312.5 ft; slightly calcareous, light olive gray below 312.5 ft.....	312.3	315.0
Silt, moderately clayey, slightly sandy, moderately to slightly calcareous, light olive gray; contains very fine to fine sand; contains many white limy areas; contains some rootlets from 315 to 320 ft..	315.0	325.0

Silt, moderately clayey, light olive gray; coarse textured.....	325.0	330.0
Silt, slightly clayey, very calcareous, white; contains a trace of very fine sand.....	330.0	333.0
Silt, moderately clayey, moderately to slightly sandy, light olive gray; contains very fine to fine sand; contains limy areas below 335 ft.....	333.0	340.0
Silt, slightly to moderately clayey, slightly to moderately sandy, light olive gray to light gray; contains very fine sand; contains rootlets below 345 ft.....	340.0	352.0
<b>Cretaceous System - Upper Cretaceous Series - Colorado Group:</b>		
<b>Niobrara Formation:</b>		
Shale, white, chalky; light brownish yellow from 356.5 to 358.5 ft; white and light brownish yellow from 360 to 363.1 ft; light brownish yellow with some pink to white from 363.1 to 375 ft. and from 380 to 385 ft; light yellowish brown from 375 to 380 ft. and below 385 ft.....	352.0	390.0